

HARRIS COUNTY FIRE CODE

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HARRIS COUNTY

FIRE MARSHAL'S OFFICE

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HARRIS COUNTY

EXECUTIVE DIRECTOR & COUNTY ENGINEER

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A property owner or owner's authorized agent who intends to conduct an operation or business, or construct, substantially improve, enlarge, alter, repair, move or change the occupancy of a building or structure, or erect, install, enlarge, alter, repair, remove, convert, or replace the installation of which is regulated by this code, or to cause any such work to be performed, shall first make application to the Harris County Engineer and obtain the required construction permit.

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The 2021 International Fire Code, including Appendices B, C, D, H and I, is hereby adopted as the Harris County Fire Code by the Commissioners Court of Harris County, Texas, acting in its capacity as the governing body of Harris County. The authority of Harris County to adopt this Code and the contents hereof is derived from Chapter 233, Subchapter C, Texas Local Government Code, Section, §233.061 et seq., as amended. The 2021 International Fire Code, and Appendices B, C, D, H and I, are revised by the following amendments and additions.

ADDITIONS, INSERTIONS, DELETION AND CHANGES TO INTERNATIONAL FIRE CODE 2021 EDITION

CHAPTER 1 IS DELETED IN ITS ENTIRETY AND REPLACED BY THE FOLLOWING:

CHAPTER 1 SCOPE AND ADMINISTRATION PART 1—GENERAL PROVISIONS

SECTION 101 -SCOPE AND GENERAL REQUIREMENTS

101.1 Title. These regulations shall be known as the Harris County Fire Code, hereinafter referred to as “this code.”

This Code is adopted as a fire code by the Commissioners Court of Harris County, Texas, acting in its capacity as the governing body of Harris County. The authority of Harris County to adopt this Code and the contents hereof is derived from Chapter 233, Subchapter C, Texas Local Government Code, Section, §233.061 et seq., as amended. The Harris County Fire Code as adopted on September 14, 2004 and which became effective on January 1, 2005 shall continue to apply to the construction of buildings for which construction begins prior to the effective date of this new Code. This Code shall apply to all buildings for which Construction or Substantial Improvement, as defined in this Code, begins after the effective date of this Fire Code. Further, pursuant to Texas Local Government Code 352.016, as amended, any inspection completed shall be to the standard set forth in this Code. This Code may be amended at any time by a majority of Commissioners Court.

101.2 Scope. This code establishes regulations affecting or relating to structures, processes, premises and safeguards regarding all of the following:

1. The hazard of fire and explosion arising from the storage, handling or use of structures, materials or devices.
2. Conditions hazardous to life, property or public welfare in the occupancy of structures or premises.
3. Fire hazards in the structure or on the premises from occupancy or operation.
4. Matters related to the construction, extension, repair, *alteration* or removal of fire protection systems.
5. Conditions affecting the safety of fire fighters and emergency responders during emergency operations.
6. New construction, substantial improvements, alterations, relocations, enlargement, replacement, repair, equipment, use and occupancy, location, of every building or structure or any appurtenances connected or attached to such buildings or structures.
7. Existing single-family dwellings converted for the use of a Boarding or Lodging House as defined in this code and in compliance with Local Government Code 233 Subchapter F “Residential Building Code”.

Exceptions:

1. One-and-two-family dwellings and multiple single-family dwellings (townhouses) not more than three stories above grade plane in height with a separate means of egress, and their accessory structures not more than three stories above grade plane height, shall comply with Local Government Code 233 Subchapter F “Residential Building Code”.
2. Industrial facilities having a fire brigade that conforms to requirements of the Occupational Safety and Health Administration and receives a Certificate of Exemption from the Fire Code Official.

101.2.1 Appendices. Provisions in the appendices shall not apply unless specifically adopted. Appendices B, C, D, H and I are adopted as part of the Harris County Fire Code.

101.3 Purpose. The purpose of this code is to establish the minimum requirements consistent with LGC. 233.062 and nationally recognized best practices for providing a reasonable level of life safety and property protection from the hazards of fire, explosion or dangerous conditions in new and existing buildings, structures and premises, and to provide a reasonable level of safety to fire fighters and emergency responders during emergency operations.

101.4 Severability. If a section, subsection, sentence, clause or phrase of this code is, for any reason, held to be unconstitutional, such decision shall not affect the validity of the remaining portions of this code.

101.5 Validity. In the event any part or provision of this code is held to be illegal or void, this shall not have the effect of making void or illegal any of the other parts or provisions hereof, which are determined to be legal; and it shall be presumed that this code would have been adopted without such illegal or invalid parts or provisions.

101.6 Abrogation and greater restrictions. This code is not intended to repeal, abrogate, or impair any existing laws, regulations, easements, covenants, or deed restrictions.

SECTION 102 – APPLICABILITY

102.1 Construction and design provisions. The construction and design provisions of this code shall apply to:

1. Structures, facilities and conditions arising after the adoption of this code.
2. Existing structures, facilities and conditions not legally in existence at the time of adoption of this code.
3. Existing structures, facilities and conditions where required in Chapter 11.
4. Existing structures, facilities and conditions that, in the opinion of the fire code official, constitute a distinct hazard to life or property.

102.2 Administrative, operational and maintenance provisions. The administrative, operational and maintenance provisions of this code shall apply to:

1. Conditions and operations arising after the adoption of this code.
2. Existing conditions and operations.

102.3 Substantial Improvement. A substantial improvement shall not be made unless the building or structure is made to comply with new construction requirements of the Harris County Fire Code.

102.3.1 Use and Occupancy. No building or structure shall be used or occupied, and no change in the existing occupancy classification or use of a building or structure or portion thereof shall be made, until a fire code inspection has been completed as approved and the County Engineer

has issued a certificate of compliance as provided herein. Issuance of a certificate of compliance shall not be construed as an approval of a violation of the provisions of this code or of other regulations, ordinances, or court orders of Harris County, Texas.

102.4 Application of building code. The design and construction of new structures shall comply with Chapters 2-10, 30, 35, and Sections 1405, 1505, 1705.15 through 1705.19, 2403, 2406 through 2409, 3101 through 3105, 3110, 3111, 3301, 3302, 3306, 3307, 3309 through 3314 and Appendix C of the *International Building Code*, and any alterations, additions, substantial improvements, changes in occupancy, use or changes in structures required by this code, which are within the scope of the *International Building Code*, shall be made in accordance therewith.

102.5 Application of residential code. Regulated by the State of Texas and the Harris County Floodplain per the County Engineer as appointed by Commissioners Court.

102.6 Historic buildings. The provisions of this code relating to the construction, alteration, repair, enlargement, restoration, relocation or moving of buildings or structures shall not be mandatory for existing buildings or structures identified and classified by the state or local jurisdiction as historic buildings where such buildings or structures do not constitute a distinct hazard to life or property. Fire protection in designated historic buildings shall be provided with an approved fire protection plan as required in Section 1103.1.1.

102.7 Referenced codes and standards. The codes and standards referenced in this code shall be those that are listed in Chapter 80, and such codes and standards shall be considered to be part of the requirements of this code to the prescribed extent of each such reference and as further regulated by Sections 102.7.1 and 102.7.2.

102.7.1 Conflicts. Where conflicts occur between provisions of this code and referenced codes and standards, the provisions of this code shall apply.

102.7.2 Provisions in referenced codes and standards. Where the extent of the reference to a referenced code or standard includes subject matter that is within the scope of this code, the provisions of this code, as applicable, shall take precedence over the provisions in the referenced code or standard.

102.8 Subjects not regulated by this code. Where applicable standards or requirements are not set forth in this code, or are contained within other laws, codes, regulations, ordinances or bylaws adopted by the jurisdiction, compliance with applicable standards of the National Fire Protection Association or other nationally recognized fire safety standards, as approved, shall be deemed as prima facie evidence of compliance with the intent of this code. Nothing herein shall derogate from the authority of the fire code official to determine compliance with codes or standards for those activities or installations within the fire code official's jurisdiction or responsibility.

102.9 Matters not provided for. Requirements that are essential for the public safety of an existing or proposed activity, building or structure, or for the safety of the occupants thereof, that are not specifically provided for by this code, shall be determined by the fire code official.

102.10 Conflicting provisions. Where there is a conflict between a general requirement and a specific requirement, the specific requirement shall be applicable. Where, in a specific case, different sections of this code specify different materials, methods of construction or other requirements, the most restrictive shall govern.

102.11 Other laws. The provisions of this code shall not be deemed to nullify any provisions of local, state or federal law.

102.12 Application of references. References to chapter or section numbers, or to provisions not specifically identified by number, shall be construed to refer to such chapter, section or provision of this code.

PART 2—ADMINISTRATION AND ENFORCEMENT

SECTION 103 - COMPLIANCE AGENCY

103.1 General. The County Engineer means the individual appointed by Commissioner’s Court and all employees designated by the County Engineer to review submitted construction plans in compliance with this code and the issuance of the required permits and final Certificates of Compliance.

103.2 Fire Code Official. The fire code official shall be the person appointed by Commissioners Court as the County Fire Marshal or the employee(s) designated by the County Fire Marshal to perform a task required by this code. The Fire Marshal shall have enforcement authority for this code and shall conduct all required inspections for compliance with this code.

103.3 Deputies. Deputies shall be appointed in accordance with the prescribed procedures of this jurisdiction and with the concurrence of the appointing authority.

103.3.1 Fire Code Official. The Harris County Fire Marshal or their designee who ensures compliance with the adopted code through inspections, interpretations, and approvals.

103.3.2 County Engineer. County Engineer has the authority to appoint staff, other related technical consultants, and personnel to facilitate review and issuance of fire code construction permits.

SECTION 104 - GENERAL AUTHORITY AND RESPONSIBILITIES

104.1 General. The fire code official is hereby authorized to administrate and enforce the provisions of this code. The fire code official shall have the authority to render interpretations of this code and to adopt policies, procedures, rules and regulations in order to clarify the application of its provisions. Such interpretations, policies, procedures, rules and regulations shall be in compliance with the intent and purpose of this code. Such policies, procedures, rules and regulations shall not have the effect of waiving requirements specifically provided for in this code.

The fire code official will consult with the County Engineer or representative(s) to ensure that consistency in construction, development, and implementation is aligned and in the best interest of commercial development.

104.2 Applications and permits. The County Engineer is authorized to receive applications, review construction documents and issue permits for construction regulated by this code. The fire code official is authorized to inspect the premises for which such permits have been issued, enforce compliance with the provisions of this code and issue permits for operations regulated by this code.

104.3 Right of entry. Where it is necessary to make an inspection to enforce the provisions of this code, or where the fire code official has reasonable cause to believe that there exists in a building or on any premises any conditions or violations of this code that make the building or premises unsafe, dangerous or hazardous, the fire code official shall have the authority to enter the building or premises at all reasonable times to inspect or to perform the duties imposed on the fire code official by this code. If such building or premises is occupied, the fire code official shall present credentials to the occupant and request entry. If such building or premises is unoccupied, the fire code official shall first make a reasonable effort to locate the owner, the owner’s authorized agent or other person having charge or control of the

building or premises and request entry. If entry is refused, the fire code official has recourse to every remedy provided by law to secure entry.

104.3.1 Warrant. Where the fire code official has first obtained a proper inspection warrant or other remedy provided by law to secure entry, an owner, the owner's authorized agent or occupant or person having charge, care or control of the building or premises shall not fail or neglect, after proper request is made as herein provided, to permit entry therein by the fire code official for the purpose of inspection and examination pursuant to this code.

104.3.2 Photographic documentation. During such examinations or inspections, the fire code official is authorized to take audio recordings, video recordings or photographs for evidence and for records for use by the Fire Marshal's Office to document and study fire hazards and scientific control for fire safety.

[A] 104.4 Identification. The *fire code official* shall carry proper identification when inspecting structures or premises in the performance of duties under this code.

[A] 104.5 Notices and orders. The *fire code official* is authorized to issue such notices or orders as are required to affect compliance with this code in accordance with Sections 112.1 and 112.3.

104.6 Official records. The fire code official and County Engineer shall keep official records as required by Sections 104.6.1 through 104.6.4. Such official records shall be retained for not less than 5 years or for as long as the structure or activity to which such records relate remains in existence, unless otherwise provided by other regulations.

104.6.1 Approvals. A record of approvals shall be maintained by the County Engineer and shall be available for public inspection during business hours in accordance with applicable laws.

104.6.2 Inspections. The fire code official shall keep a record of each inspection made, including notices and orders issued, showing the findings and disposition of each.

104.6.3 Fire records. The fire department shall keep a record of fires occurring within its jurisdiction and of facts concerning the same, including statistics as to the extent of such fires and the damage caused thereby, together with other information as required by the governing body.

104.6.4 Administrative. Application for modification, alternative methods or materials and the final decision of the fire code official and County Engineer shall be in writing and shall be officially recorded in the permanent records of the fire code official.

104.7 Liability. The fire code official, County Engineer, member of the board of appeals, officer or employee charged with the administration and enforcement of this code, while acting for the jurisdiction, in good faith and without malice in the discharge of the duties required by this code or other pertinent law or ordinance, shall not thereby be rendered civilly or criminally liable personally, and is hereby relieved from all personal liability for any damage accruing to persons or property as a result of an act or by reason of an act or omission in the discharge of official duties.

104.7.1 Legal defense. Any suit or criminal complaint instituted against any officer or employee because of an act performed by that officer or employee in the lawful discharge of duties and under the provisions of this code shall be defended by the legal representatives of the jurisdiction until the final termination of the proceedings. The fire code official, County Engineer or any subordinate shall not be liable for costs in an action, suit or proceeding that is instituted in pursuance of the provisions of this code; and any officer of Harris County, acting in good faith and

without malice, shall be free from liability for acts performed under any of its provisions or by reason of any act or omission in the performance of official duties in connection therewith.

104.8 Approved materials and equipment. Materials, equipment and devices approved by the fire code official and shall be constructed and installed in accordance with such approval.

104.8.1 Material and equipment reuse. Materials, equipment and devices shall not be reused or reinstalled unless such elements have been reconditioned, tested and placed in good and proper working condition and approved.

104.8.2 Technical assistance. To determine the acceptability of technologies, processes, products, facilities, materials and uses attending the design, operation or use of a building or premises subject to inspection by the fire code official, the fire code official and County Engineer is authorized to require the owner or owner's authorized agent to provide, without charge to the jurisdiction, a technical opinion and report. The opinion and report shall be prepared by a qualified engineer, specialist, laboratory or fire safety specialty organization acceptable to the fire code official and County Engineer and shall analyze the fire safety properties of the design, operation or use of the building or premises and the facilities and appurtenances situated thereon, to recommend necessary changes. The fire code official and County Engineer is authorized to require design submittals to be prepared by, and bear the stamp of, a registered design professional.

104.9 Modifications. Where there are practical difficulties involved in carrying out the provisions of this code, the fire code official shall have the authority to grant modifications for individual cases, provided that the fire code official shall first find that special individual reason makes the strict letter of this code impractical and the modification is in compliance with the intent and purpose of this code and that such modification does not lessen health, life and fire safety requirements. The details of action granting modifications shall be recorded and entered in the files of the fire code official.

104.10 Alternative materials, design and methods of construction and equipment. The provisions of this code are not intended to prevent the installation of any material or to prohibit any design or method of construction not specifically prescribed by this code, provided that any such alternative has been approved. An alternative material, design or method of construction shall be approved where the fire code official finds that the proposed design is satisfactory and complies with the intent of the provisions of this code, and that the material, method or work offered is, for the purpose intended, not less than the equivalent of that prescribed in this code in quality, strength, effectiveness, fire resistance, durability and safety. Where the alternative material, design or method of construction is not approved, the fire code official shall respond in writing, stating the reasons why the alternative was not approved.

104.10.1 Research reports. Supporting data, where necessary to assist in the approval of materials or assemblies not specifically provided for in this code, shall consist of valid research reports from approved sources.

104.10.2 Tests. Where there is insufficient evidence of compliance with the provisions of this code, or evidence that a material or method does not conform to the requirements of this code, or in order to substantiate claims for alternative materials or methods, the fire code official, in consultation with the County Engineer, shall have the authority to require tests as evidence of compliance to be made without expense to the jurisdiction. Test methods shall be as specified in this code or by other recognized test standards. In the absence of recognized and accepted test methods, the fire code official and County Engineer shall approve the testing procedures. Tests shall be performed by an approved agency. Reports of such tests shall be retained by the fire code official and County Engineer for the period required for retention of public records.

104.11 Fire investigations. The fire code official shall have the authority to investigate the cause, origin and circumstances of any fire, explosion or other hazardous condition. Information that could be related to trade secrets or processes shall not be made part of the public record, except as directed by a court of law.

104.11.1 Assistance from other agencies. Police and other enforcement agencies shall have authority to render necessary assistance in the investigation of fires when requested to do so by the Fire Marshal.

104.12 Authority at fires and other emergencies. The fire chief or officer of the fire department in charge at the scene of a fire or other emergency involving the protection of life or property, or any part thereof, shall have the authority to direct such operation as necessary to extinguish or control any fire, perform any rescue operation, investigate the existence of suspected or reported fires, gas leaks or other hazardous conditions or situations, or take any other action necessary in the reasonable performance of duty. In the exercise of such power, the Fire Marshal or fire chief is authorized to prohibit any person, vehicle, vessel or thing from approaching the scene, and is authorized to remove, or cause to be removed or kept away from the scene, any vehicle, vessel or thing that could impede or interfere with the operations of the fire department and, in the judgment of the fire chief, any person not actually and usefully employed in the extinguishing of such fire or in the preservation of property in the vicinity thereof.

104.12.1 Barricades. The Fire Marshal, fire chief or officer of the fire department in charge at the scene of an emergency is authorized to place ropes, guards, barricades or other obstructions across any street, alley, place or private property in the vicinity of such operation so as to prevent accidents or interference with the lawful efforts of the fire department to manage and control the situation and to handle fire apparatus.

104.12.2 Obstructing operations. Persons shall not obstruct the operations of the fire department in connection with extinguishment or control of any fire, or actions relative to other emergencies, or disobey any lawful command of the Fire Marshal, fire chief or officer of the fire department or Fire Marshal in charge of the emergency, or any part thereof, or any lawful order of a police officer assisting the fire department.

104.12.3 Systems and devices. Persons shall not render a system or device inoperative during an emergency unless by direction of the Fire Marshal, fire chief or fire department official in charge of the incident.

104.12.4 Removal of debris and rubble after fires. Whenever any building, structure or other property in the county is partially burned, the owner or the person in charge or control thereof, shall within ten (10) days after notice from the Fire Marshal, remove all refuse, debris, charred and partially burned lumber and materials from the ground. If a building or other structure is burned to such an extent that it is rendered unrepairable, the owner of the property upon which structure is located, or owner's authorized agent, shall within thirty (30) days after notice from the Fire Marshal, remove all remaining portions of the building or structure from the property.

SECTION 105 – PERMITS

105.1 General. Permits shall be in accordance with Sections 105.1.1 through 105.7.5.

105.1.1 Permits required. A property owner or owner's authorized agent who intends to conduct an operation or business, or construct, substantially improve, enlarge, alter, repair, move or change the occupancy of a building or structure, or to erect, install, enlarge, alter, repair, remove, convert, or replace the installation of which is regulated by this code, or to cause any such work

to be performed, shall first make application to the County Engineer and obtain the required construction permit.

105.1.2 Types of permits. There shall be two types of permits as follows:

1. *Operational permit.* An operational permit allows the applicant to conduct an operation or a business for which a permit is required by Section 105.5 for either:
 - 1.1. A prescribed period.
 - 1.2. Until renewed or revoked.

Operational permits are issued by Harris County Fire Marshal's office.

2. *Construction permit.* A construction permit allows the applicant to construct, substantially improve, enlarge, alter, repair, move or change the occupancy of a building or structure, or erect, install, enlarge, alter, repair, remove, convert, or replace the installation of which is regulated by this code, or to cause any such work to be performed, or install or modify systems and equipment for which a permit is required by Section 105.6.

Construction permits are issued by Harris County Engineering's office.

105.1.3 Multiple permits for the same location. Where more than one permit is required for the same location, the fire code official, in consultation with the County Engineer, is authorized to consolidate such permits into a single permit provided that each provision is listed in the permit.

105.1.4 Emergency repairs. Where equipment replacement and repairs must be performed in an emergency situation, the permit application shall be submitted within the next working business day to the County Engineer through the approved method.

105.1.5 Repairs. Application or notice to the fire code official and County Engineer is not required for ordinary repairs to structures, equipment or systems. Such repairs shall not include the cutting away of any wall, partition or portion thereof, the removal or change of any required means of egress, or rearrangement of parts of a structure affecting the egress requirements; nor shall any repairs include addition to, alteration of, replacement or relocation of any standpipe, fire protection water supply, automatic sprinkler system, fire alarm system or other work affecting fire protection or life safety.

105.1.5.1 Fire protection repairs. The fire code official shall be notified in accordance with State rules of any repairs or impairments to any fire protection systems.

105.1.6 Annual permit. Instead of an individual construction permit for each alteration to an already approved system or equipment installation, the County Engineer is authorized to issue an annual permit on application therefor to any person, firm or corporation regularly employing one or more qualified tradespersons in the building, structure or on the premises owned or operated by the applicant for the permit.

105.1.6.1 Annual permit records. The person to whom an annual permit is issued shall keep a detailed record of alterations made under such annual permit. The fire code official and County Engineer shall have access to such records at all times or such records shall be filed with the fire code official as designated.

105.2 Application. Application for a permit required by this code shall be made to the County Engineer in such form and detail as prescribed by the fire code official and County Engineer. Applications for permits shall be accompanied by such plans as prescribed by the fire code official and County Engineer.

105.2.1 Refusal to issue permit. If the application for a permit describes a use that does not conform to the requirements of this code and other pertinent laws and ordinances, the County Engineer shall not issue a permit but shall return the application to the applicant with the refusal to issue such permit. Such refusal shall, where requested, be in writing and shall contain the reasons for refusal.

105.2.2 Inspection authorized. Before a new operational permit is approved, the fire code official is authorized to inspect the receptacles, vehicles, buildings, devices, premises, storage spaces or areas to be used to determine compliance with this code or any operational constraints required.

105.2.3 Time limitation of application. An application for a permit for any proposed work or operation shall be deemed to have been abandoned 180 days after the date of filing, unless such application has been diligently prosecuted or a permit shall have been issued; except that the fire code official, in consultation with the County Engineer, is authorized to grant one or more extensions of time for additional periods not exceeding 90 days each. The extension shall be requested in writing and justifiable cause demonstrated.

105.2.4 Action on application for operational permits. The fire code official shall examine or cause to be examined applications for operational permits and amendments thereto within a reasonable time after filing. If the application or supporting documents do not conform to the requirements of pertinent laws, the fire code official shall reject such application in writing, stating the reasons therefor. If the fire code official is satisfied that the proposed operation conforms to the requirements of this code and laws and ordinances applicable thereto, the fire code official shall issue a permit therefor as soon as practicable.

105.2.5 Action on application for construction permits. The County Engineer shall examine or cause to be examined applications for construction permits and amendments thereto within the timeline specified by State law. If the application or the construction documents do not conform to the requirements of pertinent laws, the County Engineer shall reject such application in writing, stating the reasons therefor. If the County Engineer is satisfied that the proposed work conforms to the requirements of this code and laws and ordinances applicable thereto, the County Engineer shall issue a permit therefor as soon as practicable.

105.3 Conditions of a permit. A permit shall constitute permission to maintain, store or handle materials; or to conduct processes that produce conditions hazardous to life or property; or to install equipment utilized in connection with such activities; or to install or modify any fire protection system or equipment or any other construction, equipment installation or modification in accordance with the provisions of this code where a permit is required by Section 105.5 or 105.6. Such permission shall not be construed as authority to violate, cancel or set aside any of the provisions of this code or other applicable regulations or laws of the jurisdiction.

105.3.1 Expiration. An operational permit shall remain in effect until reissued, renewed or revoked, or for such a period of time as specified in the permit. Construction permits shall automatically become invalid unless the work authorized by such permit is commenced within 180 days after its issuance, or if the work authorized by such permit is suspended or abandoned for a period of 180 days after the time the work is commenced. Before such work recommences, a new permit shall be first obtained and the fee to recommence work, if any, shall be one-half the amount required for a new permit for such work, provided that changes have not been made and will not be made in the original construction documents for such work, and provided further that such suspension or abandonment has not exceeded one year. Permits are not transferable and any change in occupancy, operation, tenancy or ownership shall require that a new permit be issued.

105.3.2 Extensions. A permittee holding an unexpired permit shall have the right to apply for an extension of the time within which the permittee will commence work under that permit where work is unable to be commenced within the time required by this section for good and satisfactory reasons. The County Engineer, in consultation with the fire code official, is authorized to grant, in writing, one or more extensions of the time period of a permit for periods of not more than 180 days each. Such extensions shall be requested by the permit holder in writing and justifiable cause demonstrated.

105.3.3 Occupancy Prohibited Before Approval. No building or structure, or portion thereof, shall be occupied until:

1. The County Engineer has issued a permit.
2. The Fire Code Official has received a request for final inspection from the permit holder as submitted on a form provided by the County Engineer.
3. A Certificate of Inspection has been issued by the Fire Code Official, which indicates all applicable provisions of this code established by Harris County have been satisfied.
4. A Certificate of Compliance has been issued by the County Engineer, which indicates all applicable codes and standards established by the County Engineer have been satisfied.

105.3.4 Partial / Conditional Certificate of Compliance. Where permits are issued and on the request of a permit applicant, the fire code official is authorized to issue a conditional certificate of compliance, or partial certificate of compliance, to occupy the premises or portion thereof before the entire work or operations on the premises is completed, provided that such portion or portions will be occupied safely prior to full completion or installation of equipment and operations without endangering life or public welfare. Prior to issuing a conditional certificate of compliance or partial certificate of compliance all the following shall be met:

1. The uncompleted portion is not relied on for compliance with any provision of this code.
2. The occupied portion:
 - a. Has a separate address and utility meter connections, or
 - b. A plan detailing the addressing and utility shutoff concept is approved by the County Engineer and fire code official.
3. Each additional phase of completion will require a separate fire code permit, unless complete plans are submitted initially, in which a separate Certificate of Compliance will be required for each phase and an additional fee will be charged.

The fire code official shall notify the permit applicant in writing of any limitations or restrictions necessary to keep the permit area safe. The holder of a conditional certificate of compliance or partial certificate of compliance shall proceed only to the point for which approval has been given, at the permit holder's own risk and without assurance that approval for the occupancy or the utilization of the entire premises, equipment or operations will be granted.

105.3.5 Posting the permit. Issued permits shall be kept on the premises designated therein at all times and shall be readily available for inspection by the fire code official and County Engineer. When a permit or approved plans are not on site or available, during an inspection, the owner of the permit or designee may be subject to a failed inspection and assessed a re-inspection fee prior to any additional inspections.

105.3.6 Compliance with code. The issuance or granting of a permit shall not be construed to be a permit for, or an approval of, any violation of any of the provisions of this code or of any other regulation or ordinance of Harris County. Permits presuming to give authority to violate or cancel the provisions of this code or other regulation or ordinances of Harris County shall not be valid. The issuance of a permit based on the approved construction documents and other approved data shall

not prevent the fire code official or County Engineer from requiring the correction of errors in the construction documents and other data. Any addition to or alteration of approved construction documents shall be approved in advance by the County Engineer, as evidenced by the issuance of a new or amended permit.

105.3.7 Information on the permit. The County Engineer and fire code official shall issue all permits required by this code on an approved form furnished for that purpose. The permit shall contain a general description of the operation or occupancy and its location, and any other information required by the County Engineer and fire code official. Issued permits shall bear the signature of the County Engineer or fire code official or other approved legal authorization.

105.3.8 Validity of permit. The issuance or granting of a permit shall not be construed to be a permit for, or an approval of, any violation of any of the provisions of this code or of any other regulation or ordinances of Harris County. Permits presuming to give authority to violate or cancel the provisions of this code or other regulations or ordinances of Harris County shall not be valid. The issuance of a permit based on the approved construction documents, approved operational documents and other approved data shall not prevent the fire code official or the County Engineer from requiring correction of errors in the documents or other data.

105.4 Revocation. The fire code official or County Engineer is authorized to revoke a permit issued under the provisions of this code where it is found by inspection or otherwise that there has been a false statement or misrepresentation as to the material facts in the application or construction documents on which the permit or approval was based including, but not limited to, any one of the following:

1. The permit is used for a location or establishment other than that for which it was issued.
2. The permit is used for a condition or activity other than that listed in the permit.
3. Conditions and limitations set forth in the permit have been violated.
4. There have been any false statements or misrepresentations as to the material fact in the application for permit or plans submitted or a condition of the permit.
5. The permit is used by a different person, property owner, or firm than the name for which it was issued.
6. The permittee failed, refused or neglected to comply with orders or notices duly served in accordance with the provisions of this code within the time provided therein.
7. The permit was issued in error or in violation of an ordinance, regulation or this code.

105.5 Required operational permits. The fire code official is authorized to issue operational permits for the operations set forth in 105.5.1 through 105.5.68.

105.5.1 Additive manufacturing. An operational permit is required to conduct additive manufacturing operations regulated by Section 320.3.

105.5.2 Aerosol products, aerosol cooking spray products and plastic aerosol 3 products. An operational permit is required to manufacture, store or handle an aggregate quantity of Level 2 or Level 3 aerosol products, aerosol cooking spray products or plastic aerosol 3 products in excess of 500 pounds (227 kg) net weight.

105.5.3 Amusement buildings. An operational permit is required to operate a special amusement building.

105.5.4 Aviation facilities. An operational permit is required to use a Group H or Group S occupancy for aircraft servicing or repair and aircraft fuel-servicing vehicles. Additional permits required by other sections of this code include, but are not limited to, hot work, hazardous materials and flammable or combustible finishes.

105.5.5 Carnivals and fairs. See Special Events permits.

105.5.6 Cellulose nitrate film. An operational permit is required to store, handle or use cellulose nitrate film in a Group A occupancy.

105.5.7 Combustible dust-producing operations. An operational permit is required to operate a grain elevator, flour starch mill, feed mill, or a plant pulverizing aluminum, coal, cocoa, magnesium, spices or sugar, or other operations producing combustible dusts as defined in Chapter 2.

105.5.8 Combustible fibers. An operational permit is required for the storage and handling of combustible fibers in quantities greater than 100 cubic feet (2.8 m³).

Exception: A permit is not required for agricultural storage.

105.5.9 Compressed gases. An operational permit is required for the storage, use or handling at normal temperature and pressure (NTP) of compressed gases in excess of the amounts listed in Table 105.5.9.

Exception: Vehicles equipped for and using compressed gas as a fuel for propelling the vehicle.

**TABLE 105.5.9
PERMIT AMOUNTS FOR COMPRESSED GASES**

TYPE OF GAS	AMOUNT (cubic feet at NTP)
Carbon Dioxide used in carbon dioxide enrichment systems	875 (100 lb)
Carbon dioxide used in insulated liquid carbon dioxide beverage dispensing applications	875 (100 lb)
Corrosive	200
Flammable (except cryogenic fluids and liquified petroleum gases)	200
Highly toxic	Any Amount
Inert and simple asphyxiant	6,000
Oxidizing (including oxygen)	504
Pyrophoric	Any Amount
Toxic	Any Amount

For SI: 1 cubic foot = 0.02832 m³

105.5.10 Covered and open mall buildings. An operational permit is required for:

1. The placement of retail fixtures and displays, concession equipment, displays of highly combustible goods and similar items in the mall.
2. The display of liquid- or gas-fired equipment in the mall.
3. The use of open-flame or flame-producing equipment in the mall.

105.5.11 Cryogenic fluids. An operational permit is required to produce, store, transport on site, use, handle or dispense cryogenic fluids in excess of the amounts listed in Table 105.5.11.

Exception: Permits are not required for vehicles equipped for and using cryogenic fluids as a fuel for propelling the vehicle or for refrigerating the lading.

**TABLE 105.5.11
PERMIT AMOUNTS FOR CRYOGENIC FLUIDS**

TYPE OF CRYOGENIC FLUID	INSIDE BUILDING (gallons)	OUTSIDE BUILDING (gallons)
Flammable	More than 1	60
Inert	60	500
Oxidizing (includes oxygen)	10	50
Physical or health hazard no including above	Any Amount	Any Amount

For SI: 1 gallon = 3.785 L

105.5.12 Cutting and welding. An operational permit is required to conduct cutting or welding operations within the jurisdiction.

105.5.13 Dry cleaning. An operational permit is required to engage in the business of dry cleaning or to change to a more hazardous cleaning solvent used in existing dry-cleaning equipment.

105.5.14 Energy storage systems. An operational permit is required for stationary and mobile energy storage systems regulated by Section 1207.

105.5.15 Exhibits and trade shows. See Special Events permits.

105.5.16 Explosives. An operational permit is required for the manufacture, storage, handling, sale or use of any quantity of explosives, explosive materials, fireworks or pyrotechnic special effects within the scope of Chapter 56.

Exception: Storage in Group R-3 occupancies of smokeless propellant, black powder and small arms primers for personal use, not for resale and in accordance with Section 5606.

105.5.17 Fire hydrants and valves. An operational permit is not required to use or operate fire hydrants or valves intended for fire suppression purposes that are installed on water systems and provided with ready access from a fire apparatus access road that is open to or generally used by the public. All permissions shall be obtained from the applicable utility district providing services.

105.5.18 Flammable and combustible liquids. An operational permit is required:

1. To use or operate a pipeline for the transportation within facilities of flammable or combustible liquids. This requirement shall not apply to the off-site transportation in pipelines regulated by the Department of Transportation (DOTn) nor does it apply to piping systems.
2. To store, handle or use Class I liquids in excess of 5 gallons (19 L) in a building or in excess of 10 gallons (37.9 L) outside of a building, except that a permit is not required for the following:
 - 2.1. The storage or use of Class I liquids in the fuel tank of a motor vehicle, aircraft, motorboat, mobile power plant or mobile heating plant, unless such storage, in the opinion of the fire code official, would cause an unsafe condition.
 - 2.2. The storage or use of paints, oils, varnishes or similar flammable mixtures where such liquids are stored for maintenance, painting or similar purposes for a period of not more than 30 days.
3. To store, handle or use Class II or Class IIIA liquids in excess of 25 gallons (95 L) in a building or in excess of 60 gallons (227 L) outside a building, except for fuel oil used in connection with oil-burning equipment.
4. To store, handle or use Class IIIB liquids in tanks or portable tanks for fueling motor vehicles at motor fuel-dispensing facilities or were connected to fuel-burning equipment.

Exception: Fuel oil and used motor oil used for space heating or water heating.
5. To remove Class I or II liquids from an underground storage tank used for fueling motor vehicles by any means other than the approved, stationary on-site pumps normally used for dispensing purposes.
6. To operate tank vehicles, equipment, tanks, plants, terminals, wells, fuel-dispensing stations, refineries, distilleries and similar facilities where flammable and combustible liquids are produced, processed, transported, stored, dispensed or used.
7. To place temporarily out of service (for more than 90 days) an underground, protected above-ground or above-ground flammable or combustible liquid tank.

8. To change the type of contents stored in a flammable or combustible liquid tank to a material that poses a greater hazard than that for which the tank was designed and constructed.
9. To manufacture, process, blend or refine flammable or combustible liquids.
10. To engage in the dispensing of liquid fuels into the fuel tanks of motor vehicles at commercial, industrial, governmental, or manufacturing establishments in accordance with Section 5706.5.4 or to engage in on-demand mobile fueling operations in accordance with Section 5707.
11. To utilize a site for the dispensing of liquid fuels from tank vehicles into the fuel tanks of motor vehicles, marine craft and other special equipment at commercial, industrial, governmental or manufacturing establishments in accordance with Section 5706.5.4 or, where required by the fire code official, to utilize a site for on-demand mobile fueling operations in accordance with Section 5707.

105.5.19 Floor finishing. An operational permit is required for floor finishing or surfacing operations exceeding 350 square feet (33 m²) using Class I or Class II liquids.

105.5.20 Fruit and crop ripening. An operational permit is required to operate a fruit- or crop-ripening facility or conduct a fruit-ripening process using ethylene gas.

105.5.21 Fumigation and insecticidal fogging. An operational permit is required to operate a business of fumigation or insecticidal fogging, and to maintain a room, vault or chamber in which a toxic or flammable fumigant is used.

105.5.22 Hazardous materials. An operational permit is required to store, transport on site, dispense, use or handle hazardous materials in excess of the amounts listed in Table 105.5.22.

**TABLE 105.5.22
PERMIT AMOUNTS FOR HAZARDOUS MATERIALS**

TYPE OF MATERIAL	AMOUNT
Combustible liquids	See Section 105.5.18
Corrosive materials	
Gases	See Section 105.5.9
Liquids	55 gallons
Solids	1,000 pounds
Explosive materials	See Section 105.5.16
Flammable materials	
Gases	See Section 105.5.9
Liquids	See Section 105.5.18
Solids	100 pounds
Highly toxic materials	
Gases	See Section 105.5.9
Liquids	Any Amount
Solids	Any Amount
Organic peroxides	
Liquids	
Class I	Any Amount
Class II	Any Amount
Class III	1 gallon
Class IV	2 gallons
Class V	No Permit Required
Solids	
Class I	Any Amount
Class II	Any Amount
Class III	10 pounds

Class IV Class V	20 pounds No Permit Required
Oxidizing materials Gases Liquids Class 4 Class 3 Class 2 Class 1 Solids Class 4 Class 3 Class 2 Class 1	See Section 105.5.9 Any Amount 1 gallon ^a 10 gallons 55 gallons Any Amount 10 pounds ^b 100 pounds 500 pounds
Pyrophoric materials Gases Liquids Solids	Any Amount Any Amount Any Amount
Toxic materials Gases Liquids Solids	See Section 105.5.9 10 gallons 100 pounds
Unstable (reactive) materials Liquids Class 4 Class 3 Class 2 Class 1 Solids Class 4 Class 3 Class 2 Class 1	Any Amount Any Amount 5 gallons 10 gallons Any Amount Any Amount 50 pounds 100 pounds
Water-reactive materials Liquids Class 3 Class 2 Class 1 Solids Class 3 Class 2 Class 1	Any Amount 5 gallons 55 gallons Any Amount 50 pounds 500 pounds

For SI: 1 gallon = 3.785 L, 1 pound = 0.454 kg.

- a. 22 gallons where Table 5003.1.1(1) Note k applies and hazard identification signs in accordance with Section 5003.5 are provided for quantities of 22 gallons or less.
- b. 220 pounds where Table 5003.1.1(1) Note k applies and hazard identification signs in accordance with Section 5003.5 are provided for quantities of 220 pounds or less.

105.5.23 HPM facilities. An operational permit is required to store, handle or use hazardous production materials.

105.5.24 High-piled storage. An operational permit is required to use a building or portion thereof with more than 500 square feet (46 m²), including aisles, of high-piled combustible storage.

105.5.25 Hot work operations. An operational permit is required for hot work including, but not limited to:

1. Public exhibitions and demonstrations where hot work is conducted.
2. Use of portable hot work equipment inside a structure.
Exception: Work that is conducted under a construction permit.
3. Fixed-site hot work equipment, such as welding booths.
4. Hot work conducted within a wildfire risk area.
5. Application of roof coverings with the use of an open-flame device.
6. Where approved, the fire code official shall issue a permit to carry out a hot work program. This program allows approved personnel to regulate their facility's hot work operations. The approved personnel shall be trained in the fire safety aspects denoted in this chapter and shall be responsible for issuing permits requiring compliance with the requirements found in Chapter 35. These permits shall be issued only to their employees or hot work operations under their supervision.

105.5.26 Industrial ovens. An operational permit is required for operation of industrial ovens regulated by Chapter 30.

105.5.27 Lumber yards and woodworking plants. An operational permit is required for the storage or processing of lumber exceeding 100,000 board feet (8,333 ft³) (236 m³).

105.5.28 Liquid- or gas-fueled vehicles or equipment in assembly buildings. An operational permit is required to display, operate or demonstrate liquid- or gas-fueled vehicles or equipment in assembly buildings.

105.5.29 LP-gas. An operational permit is required for:

1. Storage and use of LP-gas.
Exception: A permit is not required for individual containers with a 500-gallon (1893 L) water capacity or less or multiple container systems having an aggregate quantity not exceeding 500 gallons (1893 L), serving occupancies in Group R-3.
2. Operation of cargo tankers that transport LP-gas.

105.5.30 Magnesium. An operational permit is required to melt, cast, heat treat or grind more than 10 pounds (4.54 kg) of magnesium.

105.5.31 Miscellaneous combustible storage. An operational permit is required to store in any building or on any premises in excess of 2,500 cubic feet (71 m³) gross volume of combustible empty packing cases, boxes, barrels or similar containers, combustible pallets, rubber tires, rubber, cork or similar combustible material.

105.5.32 Mobile food vendor vehicles and mobile food units (MFUs). A permit is required for all mobile food vendor vehicles and mobile food units operating within unincorporated Harris County.

105.5.33 Motor fuel-dispensing facilities. An operational permit is required for the operation of automotive, marine and fleet motor fuel-dispensing facilities.

105.5.34 Open burning. Open burning is regulated by the Harris County Pollution Control Services Department (HCPCSD) and the Texas Commission on Environmental Quality (TCEQ). All permissions shall be obtained from these entities.

105.5.35 Open flames and torches. An operational permit is required to remove paint with a torch, or to use a torch or open-flame device in a wildfire risk area.

105.5.36 Open flames and candles. An operational permit is required to use open flames or candles in connection with assembly areas, dining areas of restaurants or drinking establishments.

105.5.37 Organic coatings. An operational permit is required for any organic-coating manufacturing operation producing more than 1 gallon (4 L) of an organic coating in one day.

105.5.38 Outdoor assembly venue. An operational permit is required to operate open land as a business for assemblies, recreational activities or gatherings.

105.5.39 Places of assembly. An operational permit is required to operate a place of assembly. This permit requirement shall include but is not limited to any location that allows service and consumption of alcohol on premises regardless of the determined maximum occupant load.

105.5.40 Plant extraction systems. An operational permit is required to use plant extraction systems.

105.5.41 Private fire hydrants. An operational permit is required for the existence, the removal from service, use or operation of private fire hydrants.

Exception: A permit is not required for private industry with trained maintenance personnel, private fire brigade or fire departments to maintain, test and use private hydrants.

105.5.42 Pyrotechnic special effects material. An operational permit is required for use and handling of pyrotechnic special effects material.

105.5.43 Pyroxylin plastics. An operational permit is required for storage or handling of more than 25 pounds (11 kg) of cellulose nitrate (pyroxylin) plastics, and for the assembly or manufacture of articles involving pyroxylin plastics.

105.5.44 Refrigeration equipment. An operational permit is required to operate a mechanical refrigeration unit or system regulated by Chapter 6.

105.5.45 Repair garages and motor fuel-dispensing facilities. An operational permit is required for operation of repair garages.

105.5.46 Rooftop heliports. An operational permit is required for the operation of a rooftop heliport.

105.5.47 Spraying or dipping. An operational permit is required to conduct a spraying or dipping operation utilizing flammable or combustible liquids, or the application of combustible powders regulated by Chapter 24.

105.5.48 Storage of scrap tires and tire byproducts. An operational permit is required to establish, conduct or maintain storage of scrap tires and tire byproducts that exceeds 2,500 cubic feet (71 m³) of total volume of scrap tires, and for indoor storage of tires and tire byproducts.

105.5.49 Temporary membrane structures, temporary event structures and tents. An operational permit is required to operate an air supported temporary membrane structure, a temporary special event structure or a tent having an area in excess of 400 square feet (37 m²).

Exceptions:

1. Tents used exclusively for recreational camping purposes.
2. Tents open on all sides, which comply with all of the following:
 - 2.1. Individual tents having a maximum size of 700 square feet (65 m²).
 - 2.2. The aggregate area of multiple tents placed side by side without a fire break clearance of not less than 12 feet (3658 mm) shall not exceed 700 square feet (65 m²) total.
 - 2.3. A minimum clearance of 12 feet (3658 mm) to structures and other tents shall be provided.

105.5.50 Tire-rebuilding plants. An operational permit is required for the operation and maintenance of a tire rebuilding plant.

105.5.51 Waste handling. An operational permit is required for the operation of wrecking yards, junk yards and waste material-handling facilities.

105.5.52 Wood products. An operational permit is required to store chips, hogged material, lumber or plywood in excess of 200 cubic feet (6 m³).

105.5.53 Battery exchange operations. An operational permit is required for facilities providing battery exchange programs, or equipment provided for exchange of lithium-ion or lithium metal batteries.

105.5.54 Battery powered devices, trucks, equipment and appliances. An operational permit is required for the use of a battery powered device, truck, equipment or appliance with a battery capacity greater than 300 Whs.

105.5.55 Commercial rental and warehouse complex. The owner of the property is required to obtain an operational permit for a single tenant or multiple tenant retail center, or multi-tenant office warehouse centers that share any fire and life safety systems or emergency service access.

105.5.56 Education facilities. An operational permit is required for any building, structure, or portion thereof, used by six or more persons at any one time for educational purposes for grades K-12. This includes public, private and charter schools.

105.5.57 Licensed facility. An operational permit is required for any facility that holds a state license where the licensing agency requires a fire and life safety inspection to initiate or renew the license. These occupancies shall include but not be limited to:

1. Adult Day Care
2. Alcohol and Drug Center
3. Assisted Living Facilities
4. Child Day Care Facilities
5. Foster Group Home
6. Foster Home
7. Hospital Facilities
8. Nursing Home
9. Outpatient Clinic
10. Personal care home Types A and B
11. Residential Board and Care
12. Residential Treatment Center
13. Vocational School

105.5.58 Lithium batteries. An operational permit is required for an accumulation of more than 15 cubic feet (0.42 m³) of lithium-ion or lithium metal batteries, where required by Section 322.2 or 324.3.

105.5.59 LP-gas associated with a special event. An operational permit is required for the storage and use of LP gas associated with a special event. The storage and use of LP gas shall not exceed 100 lbs. in each vendor area. If more than 100 lbs. of LP gas are required for a vendor, approval in advance is required. The aggregate storage capacity of any one installation or event shall not exceed 8,000 lbs.

105.5.60 Massage establishment. An operational permit is required for any facility that advertises or offers licensed massage therapy or other massage services.

105.5.61 Mobile home community. An operational permit is required for any mobile home park, mobile home community, manufactured home community, or built-to-rent communities. This includes properties used on a temporary or permanent basis.

105.5.62 Mobile re-fueling. An operational permit is required for mobile re-fueling operations.

Exception: Mobile re-fueling operations conducted for the purpose of an emergency operation shall not require a permit.

105.5.63 Multiple tenant/Guestroom Housing. An operational permit is required to own or operate a multiple tenant or guestroom facility. This shall include but not be limited to:

1. lodging houses
2. alternative living facilities
3. flophouses
4. halfway houses
5. Group Homes

This shall not include motels, hotels, bed and breakfast facilities, or apartments.

105.5.64 Recreational Vehicle (RV) Park. An operational permit is required for any RV park with two or more rental sites for the purpose of overnight stay for any length of time.

105.5.65 Special Events. An operational permit is required for any organized, temporary event with an estimated number of participants and spectators of 100 or more people set up outdoors in a parking lot, side of the road, open land, or any outdoor premises not normally or intended to be used for an assembly, or using a building for an event with an anticipated occupancy load of 50 or more if the building is not permitted and constructed as an assembly occupancy. Additionally, if a building is utilized for any purpose other than the intended occupancy for which the building was approved or constructed, and the temporary use is a higher life hazard, a more hazardous operation, or potential threat to the wellbeing of the anticipated attendants or occupants a Special Event Permit is required. Any venue or premises that has a current outdoor assembly venue permit and is hosting an event that is outside of normal daily operations or hosting an event that is over the normal daily average of attendance by 100 attendees, shall obtain a Special Event Permit. Events that require operational permits shall include but not be limited to:

- Fairs and Carnivals
- Trade Shows and Exhibitions
- Outdoor Craft Shows, Tent sales, Swap Meets, or Farmers Style Markets
- Concert-Outdoor or indoor if in a building not designed, constructed, or approved for this purpose or use.
- Cook-offs
- Temporary Outdoor Gatherings
- Bon Fires with anticipated spectators equaling 50 or more.
- Haunted houses if set up in buildings not designed, constructed, or intended for this purpose. This permit is only applicable if the haunted house is being utilized 3 or less days in a 7-day period. Each 3-day use shall require a new permit.
- An event at an outdoor assembly venue that temporarily changes the reported daily operations and activity.

105.5.66 Tire storage. An operational permit is required for indoor or outdoor storage of tires for sales, service, maintenance, or any other business purpose.

105.5.67 Transient living facilities. An operational permit is required for any transient living facility that has 4 or more units available for rent including but not limited to:

1. Hotel
2. Motel
3. Extended stay
4. Resorts

105.5.68 Vendor Park. An operational permit is required to utilize any outdoor or indoor area for the purpose of housing vendor operations, both food and/or merchandise sales, of three or more vendors, for more than or equal to one hundred and eighty days. Less than one hundred and eighty days, see Special Events.

105.6 Required construction permits. County Engineer is authorized to issue construction permits for work as set forth in Sections 105.6.1 through 105.6.26, and Chapters 2-10, 30, 35, and Sections 1405, 1505, 1705.15 through 1705.19, 2403, 2406 through 2409, 3101 through 3105, 3110, 3111, 3301, 3302, 3306, 3307, 3309 through 3314 and Appendix C of the *International Building Code*.

105.6.1 Automatic fire-extinguishing systems. A construction permit is required for installation of or modification to an automatic fire-extinguishing system. Maintenance performed in accordance with this code is not considered to be a modification and does not require a permit.

105.6.2 Compressed gases. Where the compressed gases in use or storage exceed the amounts listed in Table 105.5.9, a construction permit is required to install, repair damage to, abandon, remove, place temporarily out of service, or close or substantially modify a compressed gas system.

Exceptions:

1. Routine maintenance.
2. For emergency repair work performed on an emergency basis, application for permit shall be made within two working days of commencement of work.

105.6.3 Cryogenic fluids. A construction permit is required for installation of or alteration to outdoor stationary cryogenic fluid storage systems where the system capacity exceeds the amounts listed in Table 105.5.11. Maintenance performed in accordance with this code is not considered to be an alteration and does not require a construction permit.

105.6.4 Emergency responder communication coverage system. A construction permit is required for installation of or modification to in-building, two-way emergency responder communication coverage systems and related equipment. Maintenance performed in accordance with this code is not considered to be a modification and does not require a construction permit.

105.6.5 Energy storage systems. A construction permit is required to install energy storage systems regulated by Section 1207.

105.6.6 Fire alarm and detection systems and related equipment. A construction permit is required for installation of or modification to fire alarm and detection systems and related equipment. Maintenance performed in accordance with this code is not considered to be a modification and does not require a construction permit.

105.6.7 Fire pumps and related equipment. A construction permit is required for installation of or modification to fire pumps and related fuel tanks, jockey pumps, controllers and generators. Maintenance performed in accordance with this code is not considered to be a modification and does not require a construction permit.

105.6.8 Flammable and combustible liquids. A construction permit is required:

1. To install, repair or modify a pipeline for the transportation of flammable or combustible liquids.

2. To install, construct or alter tank vehicles, equipment, tanks, plants, terminals, wells, fuel dispensing stations, refineries, distilleries, and similar facilities where flammable and combustible liquids are produced, processed, transported, stored, dispensed or used.
3. To install, alter, remove, abandon or otherwise dispose of a flammable or combustible liquid tank.

105.6.9 Fuel cell power systems. A construction permit is required to install stationary fuel cell power systems.

105.6.10 Gas detection systems. A construction permit is required for the installation of or modification to gas detection systems. Maintenance performed in accordance with this code is not considered a modification and shall not require a permit.

105.6.11 Gates and barricades across fire apparatus access roads. A construction permit is required for the installation of or modification to a gate or barricade across a fire apparatus access road.

105.6.12 Hazardous materials. A construction permit is required to install, repair damage to, abandon, remove, place temporarily out of service, or close or substantially modify a storage facility or other area regulated by Chapter 50 where the hazardous materials in use or storage exceed the amounts listed in Table 105.5.22.

Exceptions:

1. Routine maintenance.
2. For repair work performed on an emergency basis, application for permit shall be made within two working days of commencement of work.

105.6.13 High-piled combustible storage. A construction permit is required for the installation of or modification to a structure with more than 500 square feet (46 m²), including aisles, of high-piled combustible storage. Maintenance performed in accordance with this code is not considered to be a modification and does not require a construction permit.

105.6.14 Industrial ovens. A construction permit is required for installation of industrial ovens regulated by Chapter 30.

Exceptions:

1. Routine maintenance.
2. For repair work performed on an emergency basis, application for permit shall be made within two working days of commencement of work.

105.6.15 LP-gas. A construction permit is required for installation of or modification to an LP-gas system. Maintenance performed in accordance with this code is not considered to be a modification and does not require a permit.

105.6.16 Motor vehicle repair rooms and booths. A construction permit is required to install or modify a motor vehicle repair room or booth. Maintenance performed in accordance with this code is not considered to be a modification and does not require a permit.

105.6.17 Plant extraction systems. A construction permit is required for installation of or modification to plant extraction systems. Maintenance performed in accordance with this code is not considered to be a modification and does not require a permit.

105.6.18 Private fire hydrants. A construction permit is required for the installation or modification of private fire hydrants. Maintenance performed in accordance with this code is not considered to be a modification and does not require a permit.

105.6.19 Smoke control or smoke exhaust systems. Construction permits are required for installation of or alteration to smoke control or smoke exhaust systems. Maintenance performed in accordance with this code is not considered to be an alteration and does not require a permit.

105.6.20 Solar photovoltaic power systems. A construction permit is required to install or modify solar photovoltaic power systems. Maintenance performed in accordance with this code is not considered to be a modification and does not require a permit.

105.6.21 Special event structure. Permitted through operational permit as listed in section 105.5

105.6.22 Spraying or dipping. A construction permit is required to install or modify a spray room, dip tank or booth. Maintenance performed in accordance with this code is not considered to be a modification and does not require a permit.

105.6.23 Standpipe systems. A construction permit is required for the installation, modification or removal from service of a standpipe system. Maintenance performed in accordance with this code is not considered to be a modification and does not require a permit.

105.6.24 Temporary membrane structures and tents. Permitted through operational permit as listed in section 105.5

105.6.25 Building Construction Permits. A construction permit is required to construct, substantially improve, enlarge, alter, repair, move, or change the occupancy of a building or structure, or to erect, install, enlarge, alter, repair, remove, convert, or replace the installation of which is regulated by this code, or to cause any such work to be performed.

105.6.26 Explosion control systems. A construction permit is required for installation of or modification to explosion control systems.

105.6.27 Electric Vehicle Charging Stations. A construction permit is required for installation of or modification to an electric vehicle charging station(s) in accordance with Chapter 6, section 611.

105.87 Fire Code Exemption. Industrial facilities that have a fire brigade meeting the minimum requirements of the Occupational Safety and Health Administration (OSHA) standard can be approved for exemption from the requirements of the fire code regulation including operational permits.

105.87.1 Certificate of Exemption. An industrial facility shall be issued a Certificate of Exemption after application is made and approval is granted by the fire code official. If exemption is not approved, is revoked or expires without renewal; the industrial facility shall be subject to full compliance with obtaining permits as required.

105.87.2 Application. Application for fire code exemption shall be made to the fire code official in such form and detail as prescribed by the fire code official. Applications for exemption shall be accompanied by such documentation as prescribed by the fire code official.

105.87.3 Refusal to issue exemption. If it is determined that an application fails to prove that a fire brigade is compliant with OSHA standards or an applicant refuses to provide all required documentation, the fire code official shall not issue a Certificate of Exemption and shall return the application to the applicant with explanation for disapproval.

105.87.4 Expiration. A Certificate of Exemption shall remain in effect until reissued, renewed or revoked, or for a period not to exceed 3 years. Certificates of Exemption are not transferable and any changes to the status of a facility or the facility's fire brigade shall be immediately reported to the fire code official. A new application shall be made upon expiration of a Certificate of Exemption, if the ownership of the facility changes, if the capabilities of the fire brigade change, or if the facility's name changes.

105.7.5 Revocation. The fire code official is authorized to revoke a Certificate of Exemption where it is found that there has been false statement or misrepresentation as to the material facts in the application or supporting documentation on which the approval was based.

SECTION 106 - CONSTRUCTION DOCUMENTS

[A] 106.1 Submittals. *Construction documents* and supporting data shall be submitted online digital application and documents with each application for a permit and in such form and detail as required by the *County Engineer*. The *construction documents* shall be prepared by a *registered design professional* where required by the statutes of the jurisdiction in which the project is to be constructed.

Exception: The County Engineer in consultation with the *fire code official* is authorized to waive the submission of *construction documents* and supporting data not required to be prepared by a *registered design professional* if it is found that the nature of the work applied for is such that review of *construction documents* is not necessary to obtain compliance with this code.

[A] 106.2 Examination of documents. The fire code official designates The *County Engineer* to examine or cause to be examined the accompanying *construction documents* and shall ascertain by such examinations whether the work indicated and described is in accordance with the requirements of this code.

[A] 106.2.1 Information on construction documents. *Construction documents* shall be drawn to scale on suitable material. Documents in a digital format are acceptable. *Construction documents* shall be of sufficient clarity to indicate the location, nature and extent of the work proposed and show in detail that it will conform to the provisions of this code and relevant laws, ordinances, rules and regulations as determined by the *fire code official and County Engineer*.

106.2.2 Fire protection system shop drawings. Shop drawings for the fire protection system(s) shall be submitted to indicate compliance with this code and the construction documents, and shall be approved prior to the start of installation. Shop drawings shall contain all information as required by the referenced installation standards in Chapter 9.

106.2.3 Applicant responsibility. It shall be the responsibility of the applicant to ensure that the construction documents include all of the fire protection requirements, and the shop drawings are complete and in compliance with the applicable codes and standards.

[A] 106.2.4 Approved documents. *Construction documents approved* by the *County Engineer* are approved with the intent that such *construction documents* comply in all respects with this code. Review and approval by the *County Engineer* shall not relieve the applicant of the responsibility of compliance with this code.

[A] 106.2.4.1 Phased approval. The County Engineer in consultation with the *fire code official* is authorized to issue a permit for the construction of part of a structure, system or operation before the *construction documents* for the whole structure, system or operation have been submitted, provided that adequate information and detailed statements have been filed complying with pertinent requirements of this code. The holder of such permit for parts of a structure, system or operation shall proceed at the holder's own risk with the building operation and without assurance that a permit for the entire structure, system or operation will be granted.

106.3 Amended construction documents. Work shall be installed in accordance with the approved construction documents, and any changes made during construction that are not in compliance with the approved construction documents shall be resubmitted for approval as an amended set of construction documents. All changes to the approved construction documents shall be submitted and approved by the County Engineer prior to any inspection request.

[A] 106.4 Retention of construction documents. A digital copy of *construction documents* shall be retained by the *County Engineer* for a period of not less than 180 days from date of completion of the permitted work, or as required by state or local laws. The digital copy of *approved construction documents* shall be returned to the applicant and said set shall be kept on the site of the building or work at all times during which the work authorized thereby is in progress.

SECTION 107 – FEES

107.1 Fees. A permit shall not be issued until the fees have been paid, nor shall an amendment to a permit be released until the additional fee, if any, has been paid.

[A] 107.2 Schedule of permit fees. A fee for each permit shall be paid as required, in accordance with the schedule as established by Harris County Commissioners Court.

107.3 Permit valuations. The applicant for a permit shall provide an estimated permit value at the time of application. Permit valuations shall include the total value of work, including materials and labor, for which the permit is being issued, such as electrical, gas, mechanical, plumbing equipment and permanent systems. If, in the opinion of the *fire code official*, the valuation is underestimated on the application, the permit shall be denied unless the applicant can show detailed estimates to meet the approval of the *fire code official*. Final permit valuation shall be set by the *fire code official*.

[A] 107.4 Work commencing before permit issuance. A person who commences any work, activity or operation regulated by this code before obtaining the necessary permits shall be subject to a fee established by the Harris County Commissioners Court, which shall be in addition to the required permit fees.

[A] 107.5 Refunds. The Harris County Commissioners Court is authorized to establish a refund policy.

SECTION 108 – INSPECTIONS

108.1 Inspection authority. The fire code official is authorized to enter and examine any building, structure, marine vessel, vehicle or premises in accordance with Section 104.3 for the purpose of enforcing this code.

108.2 Inspections. The fire code official is authorized to conduct such inspections as are deemed necessary to determine the extent of compliance with the provisions of this code and to approve reports of inspection by approved agencies or individuals. Reports of such inspections shall be prepared and submitted in writing for review and approval. Inspection reports shall be certified by a responsible officer of such approved agency or by the responsible individual. The fire code official is authorized to engage

such expert opinion as deemed necessary to report on unusual, detailed or complex technical issues subject to the approval of Harris County.

108.2.1 Inspection requests. It shall be the duty of the holder of the permit or their duty authorized agent to notify the fire code official when work is ready for inspection. It shall be the duty of the permit holder to provide access to and means for inspections of such work that are required by this code.

108.2.2 Approval required. Work shall not be done beyond the point indicated in each successive inspection without first obtaining the approval of the fire code official. The fire code official, on notification, shall make the requested inspections and shall either indicate the portion of the construction that is satisfactory as completed, or notify the permit holder or his or her agent wherein the same fails to comply with this code. Any portions that do not comply shall be corrected, and such portion shall not be covered or concealed until authorized by the fire code official.

108.3 Concealed work. It shall be the duty of the permit applicant to cause the work to remain visible and able to be accessed for inspection purposes. Where any installation subject to inspection prior to use is covered or concealed without having first been inspected, the fire code official shall have the authority to require that such work be made visible and able to be accessed for inspection. Neither the fire code official, County Engineer nor Harris County shall be liable for expense entailed in the removal or replacement of any material required to allow inspection.

108.4 Approvals. Approval as the result of an inspection shall not be construed to be an approval of a violation of the provisions of this code or of other ordinances of Harris County. Inspections presuming to give authority to violate or cancel provisions of this code or of other regulation or ordinances of the jurisdiction shall not be valid.

SECTION 109 – MAINTENANCE

109.1 Maintenance of safeguards. Where any device, equipment, system, condition, arrangement, level of protection, or any other feature is required for compliance with the provisions of this code, or otherwise installed, such device, equipment, system, condition, arrangement, level of protection, or other feature shall thereafter be continuously maintained in accordance with this code and applicable referenced standards.

109.2 Testing and operation. Equipment requiring periodic testing or operation to ensure maintenance shall be tested or operated as specified in this code.

109.2.1 Re-inspection and testing. Where any work or installation does not pass an initial test or inspection, the necessary corrections shall be made so as to achieve compliance with this code. The work or installation shall then be resubmitted to the fire code official for inspection and testing.

109.3 Recordkeeping. A record of periodic inspections, tests, servicing and other operations and maintenance shall be maintained on the premises or other approved location for not less than 3 years, or a different period of time where specified in this code or referenced standards. Records shall be made available for inspection by the fire code official, and a copy of the records shall be provided to the fire code official on request. The fire code official is authorized to prescribe the form and format of such recordkeeping. The fire code official is authorized to require that certain required records be filed with the fire code official.

109.3.1 Reporting. Maintenance and testing shall be reported to the fire code official through the Harris County Commissioner Court approved reporting platform. All installations, testing and maintenance, and

yellow or red tag notifications shall be reported through this online platform to the fire code official to be considered as the appropriate notification to the AHJ as ordered through the State mandated rules.

109.4 Supervision. Maintenance and testing shall be under the supervision of a responsible person who shall ensure that such maintenance and testing are conducted at specified intervals in accordance with this code.

109.5 Rendering equipment inoperable. Portable or fixed fire-extinguishing systems or devices, and fire-warning systems, shall be provided with ready access and shall not be rendered inoperative, except as necessary during emergencies, maintenance, repairs, alterations, drills or prescribed testing.

109.6 Overcrowding. Overcrowding or admittance of any person beyond the approved capacity of a building or a portion thereof shall not be allowed. The fire code official, on finding any overcrowding conditions or obstructions in aisles, passageways or other means of egress, or on finding any condition that constitutes a life safety hazard, shall be authorized to cause the event to be stopped until such condition or obstruction is corrected or require removal of occupants at a location when actual occupancy exceeds the permitted or posted occupant load. A person commits an offense if he refuses to obey an order to vacate.

SECTION 110 - RESERVED

SECTION 111 - MEANS OF APPEALS

111.1 Board of appeals established. In order to hear and decide appeals of orders, decisions or determinations made by the fire code official or County Engineer relative to the application and interpretation of this code, there shall be and is hereby created a board of appeals. The board of appeals shall be appointed by the Commissioners Court and shall hold office at its pleasure. The board shall adopt rules of procedure for conducting its business and shall render all decisions and findings in writing to the appellant with a duplicate copy to the fire code official and County Engineer.

111.2 Limitations on authority. An application for appeal shall be based on a claim that the true intent of this code or the rules legally adopted thereunder have been incorrectly interpreted, the provisions of this code do not fully apply, or an equivalent or better form of construction is proposed. The board shall not have authority to waive requirements of this code or interpret the administration of this code.

111.3 Qualifications. The board of appeals shall consist of members who are qualified by experience and training to pass on matters pertaining to hazards of fire, explosions, hazardous conditions or fire protection systems, and are not employees of Harris County.

111.4 Administration. The fire code official and the County Engineer shall take action without delay in accordance with the decision of the board.

SECTION 112 – VIOLATIONS

112.1 Unlawful acts. It shall be unlawful for a person, firm or corporation to erect, construct, alter, repair, remove, demolish or utilize a building, occupancy, premises or system regulated by this code, or cause same to be done, in conflict with or in violation of any of the provisions of this code. No work shall be commenced on any fire protection system at a new construction site or an existing structure, other than maintenance work, without a permit being issued or by approval to begin work by the fire code official or County Engineer. Both the individual contractor, along with the site general contractor will be held liable for such actions. Where work is commenced prior to obtaining said permit, the fees may be increased as

determined by the fee schedule adopted by Commissioners Court. Payment of the increased fee shall not relieve any person from fully complying with the requirements to obtain a permit nor of any other penalties herein.

112.2 Owner/occupant responsibility. Correction and abatement of violations of this code shall be the responsibility of the owner or the owner's authorized agent. Where an occupant creates, or allows to be created, hazardous conditions in violation of this code, the occupant shall be held responsible for the abatement of such hazardous conditions.

112.3 Notice of violation, Fire Marshal Order or citation. Where the fire code official finds a building, premises, vehicle, storage facility or outdoor area that is in violation of this code, the fire code official is authorized to prepare a written notice of violation, Fire Marshal's Order or citation describing the conditions deemed unsafe and, where compliance is not immediate, specifying a time for reinspection.

112.3.1 Service. A notice of violation issued pursuant to this code shall be served on the owner, the owner's authorized agent, operator, occupant or other person responsible for the condition or violation, either by personal service, mail or by delivering the same to, and leaving it with, some person of responsibility on the premises. For unattended or abandoned locations, a copy of such notice of violation shall be posted on the premises in a conspicuous place at or near the entrance to such premises and the notice of violation shall be mailed by certified mail with return receipt requested or a certificate of mailing, to the last known address of the owner, the owner's authorized agent, or occupant.

112.3.2 Compliance with orders and notices. A notice of violation issued or served as provided by this code shall be complied with by the owner, the owner's authorized agent, operator, occupant or other person responsible for the condition or violation to which the notice of violation pertains. In cases of extreme danger to persons or property, immediate compliance is required. If the building or other premises is not owner occupied, under lease, or otherwise, and the order or notice requires additions or changes in the building or premises which would immediately become real estate and be the property of the owner of the building or premises, such orders or notices shall be complied with by the owner unless the owner and the occupant have agreed otherwise at which event the occupant shall comply.

112.3.3 Prosecution of violations. If the notice of violation is not complied with promptly, the fire code official is authorized to request the legal counsel of Harris County to institute the appropriate legal proceedings at law or in equity to restrain, correct or abate such violation or to require removal or termination of the unlawful occupancy of the structure in violation of the provisions of this code or of the order or direction made pursuant hereto.

112.3.4 Unauthorized tampering. Signs, tags or seals posted or affixed by the fire code official, or County Engineer shall not be mutilated, destroyed or tampered with, or removed, without authorization from the fire code official.

112.4 Violation penalties. Persons who shall violate a provision of this code or shall fail to comply with any of the requirements thereof or who shall erect, install, alter, repair or do work in violation of the approved construction documents or directive of the fire code official, or of a permit or certificate used under provisions of this code, shall be guilty of a misdemeanor, punishable by a fine of not more than \$500.00 dollars. Each day that a violation continues after due notice has been served shall be deemed a separate offense.

112.4.1 Abatement of violation. In addition to the imposition of the penalties herein described, the fire code official is authorized to institute appropriate action to prevent unlawful construction or to

restrain, correct or abate a violation; or to prevent illegal occupancy of a structure or premises; or to stop an illegal act, conduct of business or occupancy of a structure on or about any premises.

112.4.2 Offense Penalties. Penalties for citations issued by the Fire Code Official shown in Table 112.4.2. Court costs are in addition to the fines.

**TABLE 112.4.2
PENALTIES FOR CITATIONS**

Code	Section	Offense	Fine
Fire	104.12.4	Failure to remove debris or rubble after fire	\$200 to \$500
Fire	105.3.3	Occupancy prior to approval	\$200 to \$500
Fire	112.1	Working without permits (Plus Double Permit Fees)	\$200 to \$500
Fire	112.3.2 113.4	Failure to comply with orders and notices	\$200 to \$500
Fire	112.3.4	Unauthorized tampering or removal (tags, seal, sign, label, or posting)	\$100 to \$250
Fire	109.6 114.2	Unsafe building – overcrowding	\$500
Fire	503.4	Obstructing a Fire Lane	\$200 to \$500
Fire	1032.3	Obstructing Means of Egress	\$200 to \$500
Fire	109.3.1	Failure to report installation, testing, and maintenance of Fire Protection Systems	\$200 to \$500
Fire	308.1.4.1 313.2	Storing and/or utilizing charcoal burners, LP gas fueled or open flame cooking equipment, portable generators, lawn-care equipment, or vehicles in an R2 occupancy utilized as an apartment or multi-tenant housing or on a balcony, patio, or within 10 feet of this type of occupancy	\$200 to \$500
Fire	All Others	All other violations	\$200 to \$500

SECTION 113 - STOP WORK ORDER

113.1 Authority. Where the fire code official finds any work regulated by this code being performed in a manner contrary to the provisions of this code, or in a dangerous or unsafe manner, the fire code official is authorized to issue a stop work order.

113.2 Issuance. The stop work order shall be in writing and shall be given to the owner of the property, the owner's authorized agent or the person performing the work. Upon issuance of a stop work order, the cited work shall immediately cease. The stop work order shall state the reason for the order and the conditions under which the cited work is authorized to resume.

113.3 Emergencies. Where an emergency exists, the fire code official shall not be required to give a written notice prior to stopping the work.

113.4 Failure to comply. Any person who shall continue any work after having been served with a stop work order, except such work as that person is directed to perform to remove a violation or unsafe condition, shall be subject to fine of not less than \$200.00 dollars or more than \$500.00 dollars.

SECTION 114 - UNSAFE STRUCTURES OR EQUIPMENT

114.1 General. If during the inspection of a premises, a structure, a building or any building system, in whole or in part, constitutes a clear and inimical threat to human life, safety or health, the fire code official shall issue such notice or orders to remove or remedy the conditions as shall be deemed necessary in

accordance with this section, and shall refer the building to the County Engineer for any needed permits for repairs, alterations, remodeling, removing or demolition required. If the fire code official determines that the identified hazardous conditions constitute an immediate threat to life or public harm, the fire code official is authorized to refer property owners or responsible parties to the Harris County Attorney's Office immediately for any and all available remedies.

114.1.1 Unsafe conditions. Structures or existing equipment that are or hereafter become unsafe, unsanitary or deficient because of inadequate means of egress, inadequate light and ventilation, or that constitute a fire hazard, are otherwise dangerous to human life or the public welfare, or involve illegal or improper occupancy or inadequate maintenance, shall be deemed an unsafe condition. Unsafe structures shall be taken down and removed or made safe, as the fire code official deems necessary and as provided for in this section. A vacant structure that is not secured against unauthorized entry shall be deemed unsafe.

114.1.2 Structural hazards. Where an apparent structural hazard is caused by the faulty installation, operation or malfunction of any of the items or devices governed by this code, the fire code official shall immediately notify the County Engineer in accordance with Section 114.1.

114.2 Evacuation. The fire code official or the fire department official in charge of an incident shall be authorized to order the immediate evacuation of any occupied structure, building or premises deemed unsafe where such structure, building or premises has hazardous conditions that pose an imminent danger to occupants. Persons so notified shall immediately leave the structure, building or premises and shall not enter or re-enter until authorized to do so by the fire code official or the fire department official in charge of the incident. Failure to comply with the orders of the fire code official or the in-charge officer of a fire scene shall constitute a violation of this code.

114.3 Record. The fire code official shall cause a report to be filed on an unsafe condition. The report shall state the occupancy of the structure and the nature of the unsafe condition.

114.4 Notice. If an unsafe condition is found, the fire code official shall serve on the owner of the structure, building or premises or the owner's authorized agent a written notice that describes the condition deemed unsafe and specifies the required repairs or improvements to be made to abate the unsafe condition, or requires the unsafe structure to be demolished within a stipulated time. Such notice shall require the person thus notified to declare immediately to the fire code official acceptance or rejection of the terms of the order.

114.5 Method of service. Such notice shall be deemed properly served where a copy thereof is served in accordance with one of the following methods:

1. A copy is delivered to the owner personally and a copy affixed to the structure, building or premises.
2. A copy is sent by certified or registered mail addressed to the owner at the last known address with return receipt requested and a copy affixed to the structure, building, or premises.

114.6 Restoration or abatement. The structure or equipment determined to be unsafe by the fire code official is permitted to be restored to a safe condition. The owner, the owner's authorized agent, operator or occupant of a structure, premises or equipment deemed unsafe by the fire code official shall abate or cause to be abated or corrected such unsafe conditions either by repair, rehabilitation, demolition or other approved corrective action. To the extent that repairs, alterations or additions are made, or a change of occupancy occurs during the restoration of the structure, such repairs, alterations, additions or change of occupancy shall comply with the requirements of Section 105.1.5.

114.7 Summary abatement. Where conditions exist that are deemed hazardous to life and property, the fire code official or fire department official in charge of the incident is authorized to abate summarily such hazardous conditions that are in violation of this code.

EXHIBIT A - ADDITIONS, INSERTIONS, DELETION AND CHANGES TO INTERNATIONAL FIRE CODE 2021 EDITION

CHAPTER 2 – DEFINITIONS

SECTION 202 IS AMENDED BY ADDING OR AMENDING DEFINITIONS AS FOLLOWS:

24-HOUR BASIS. The actual time that a person is an occupant within a facility for the purpose of receiving care. It shall not include a facility that is open for 24 hours and is capable of providing care to someone visiting the facility during any segment of the 24 hours. See definitions for Group I occupancies as adopted by Harris County.

ADULT DAY CARE FACILITY. See Institutional Group and I-4 occupancy definitions.

ADVANCED EXTERIOR FIREFIGHTING. Offensive firefighting performed outside of an enclosed structure when the fire is beyond the incipient stage. Advanced exterior firefighting often requires firefighting personnel to contain, control and extinguish exterior fires involving site specific hazards, such as flammable and combustible liquid spills or leaks and electrical substations. Advanced exterior firefighting is usually performed using handlines flowing up to 300 gallons per minute (gpm), master streams or similar devices for the manual application of specialized agents. Thermal protective clothing is required, and the use of self-contained breathing apparatus could be required.

ADVANCED EXTERIOR/INTERIOR STRUCTURAL FIREFIGHTING. Firefighting performed that meets both the definition of Advanced Exterior Firefighting and Interior Structural Firefighting.

ALTERNATE HOUSING FACILITY. A residence in which three or more unrelated parolees reside that is owned by an individual, private entity, a non-profit or faith-based organization, but is not operated by, established by, or contracted with the Texas Department of Criminal Justice.

AMBULATORY CARE FACILITY. Buildings or portions thereof used to provide medical, surgical, psychiatric, nursing or similar care on a less-than-24-hour basis to persons who are rendered incapable of self preservation by the services provided or staff has accepted responsibility for care recipients already incapable. This group may include but not be limited to the following:

- Dialysis centers
- Sedation Dentistry
- Surgery centers
- Colonic centers

APPROVED. Acceptable to the fire code official

APPROVED CAPACITY. The maximum approved amount or number of gallons that can be received or contained; cubic contents; volume in cubic ft., or in gallons.

ASSISTED LIVING FACILITY. An establishment that furnishes in one or more facilities, food and shelter to four or more persons who are unrelated to the proprietor of the establishment and provides personal care services or administration of medication by a licensed person or may provide limited skilled nursing services as outlined in the Texas Health and Safety Code chapter 247.

BATTERY. A class of devices which contain materials that convert chemical energy into electrical energy which then can be used as a power source. There are several technologies that utilize a variety of materials and chemistries for the purpose of storing this electro-chemical energy for use when required.

BATTERY TYPES. For the purposes of this code, certain types are defined as follows:

FLOW BATTERY. A type of storage battery that includes chemical components dissolved in two different liquids. Ion exchange, which provides the flow of electrical current, occurs through the membrane while both liquids circulate in their respective spaces. (Includes vanadium redox, zinc-bromine, polysulfide-bromide, and other flowing electrolyte-type technologies).

HYBRID SUPERCAPACITOR BATTERY (Lithium-ion capacitor (LIC)). The lithium-ion capacitor (LIC or LiC) is a hybrid type of capacitor classified as a type of supercapacitor. It combines lithium-ion technology and electric double layer capacitor (EDLC) construction. It is called a hybrid because the anode is the same as those used in lithium-ion batteries and the cathode is the same as those used in supercapacitors. Activated carbon is typically used as the cathode. The anode of the LIC consists of carbon material which is often pre-doped with lithium ions.

IRON-AIR AQUEOUS BATTERY. The battery includes iron and air electrodes. Each of the cells are filled with water-based, non-flammable alkaline electrolyte (which functions partially like the anolytes and catholytes of flow batteries battery. The battery does not present the risk of thermal runaway. Like the Ni-Fe battery they are relatively coulombically inefficient on float charge, and thus are usually disconnected from the charge bus when at or nearing full charge.

LEAD-ACID BATTERY. An aqueous storage battery that is comprised of lead electrodes, (lead dioxide is the active material for the positive anode and metallic lead is the active material for the negative cathode), immersed in a solution of water and sulfuric acid electrolyte. Common major classification distinctions (i.e., types) include, vented lead-acid (VLA), and valve-regulated lead-acid (VRLA). The VRLA is further subdivided into two types representing the method in which the electrolyte is immobilized: either gelled (gel cell) or absorbed in finely woven porous fiberglass mat (AGM) separators inside the battery between the electrodes.

LITHIUM-ION BATTERY. A storage battery with lithium ions serving as the charge carriers of the battery. The electrolyte is a polymer mixture of carbonates with flammable organic salt in a liquid form. Lithiated metal or mixed metal oxides (e.g. cobalt [LCO], manganese [LMO], nickel-manganese-cobalt [NMC or NCM], nickel-cobalt-aluminum [NCA] or iron phosphate [LFP]) typically make up the cathode and forms of carbon or graphite (or lithium titanate oxide [LTO]) typically form the anode. Each of these different types of cathodes and anode combinations produce different energy densities, different lifetimes, differing fast charge abilities, and differing safety characteristics, among many other things. The choice of Li-ion chemistry is often driven by whichever of these factors or best mix of factors is/are most important for the application.

LITHIUM-SULFUR RECHARGEABLE BATTERY. A storage battery that is similar to the lithium-ion battery except that it has a lithium metal anode in the place of the traditional carbon or graphite anode. A lithium-sulfur battery is a secondary (rechargeable) battery that has lithium metal at the anode, sulfur at the cathode, and the electrolyte is nonaqueous.

NICKEL-CADMIUM (Ni-Cd) BATTERY. An alkaline storage battery in which the positive active material is nickel oxide, the negative electrode contains cadmium, and the electrolyte is a solution of water and potassium hydroxide. They lose less life at high temperatures and have better capacity at low temperatures than most other battery technologies and have a long life if not cycled too much.

NICKEL-HYDROGEN (NiH₂). The cells are a hybrid technology, combining elements from both batteries and fuel cells. The battery differs from a nickel-metal hydride (NiMH) battery by the use of hydrogen in gaseous form. The nickel-hydrogen cells utilize the nickel hydroxide electrode from nickel-cadmium cells and a platinum hydrogen electrode from fuel cell technology to create a chemistry without the

issues and limitations inherent with the cadmium electrode. The cell is contained within a hermetically sealed pressure vessel that envelopes the electrodes and accommodates the pressurized hydrogen.

NICKEL IRON (Ni-Fe). The battery has nickel (III) oxide-hydroxide positive plates and iron negative plates, with an electrolyte of potassium hydroxide. The active materials are held in nickel-plated steel tubes or perforated pockets. Nickel-iron batteries do not cause spill concerns since there is no acid in the component. They are capable of tens of thousands of cycles and have calendar lifetimes of well over 50 years. However, they are highly coulombically inefficient (with the inefficiency coming from high percentages of water electrolysis from the charging current) when at or near full state-of-charge (SOC). As such, they are usually equipped with catalytic recombiner vents and automatic watering systems.

NICKEL-METAL HYDRIDE (Ni-MH). An alkaline storage battery in which the positive active material is nickel oxide, the negative electrode is an intermetallic compound, and the electrolyte is usually potassium hydroxide solution in water.

NICKEL-ZINC (Ni-Zn). A battery that is chemically similar to the nickel-metal hydride battery. Nickel and zinc have low toxicity, the battery is non-flammable and presents no threat to the environment. The Ni-Zn battery uses an alkaline electrolyte (potassium hydroxide, KOH) and zinc acts as the negative electrode while nickel hydroxide is the positive electrode.

SODIUM NICKEL CHLORIDE (NaNiCl). This battery is a member of the 'high temperature' family, which works at typical temperature scope of 270°C–350°C. Its cell contains sodium and nickel chloride electrodes, isolated by a beta-alumina electrolyte, which can conduct sodium particles yet not electrons. This chemistry is much safer than most battery chemistries with far fewer toxic materials involved in its production, but it does not have the cycling ability or energy density of most of the Li-ion chemistries

ZINC-AIR AQUEOUS BATTERY. A zinc-air battery contains a zinc electrode and porous air electrode separated by a membrane and an aqueous alkaline electrolyte that is used in a manner similar to the catholytes and anolytes of a flow battery. The cathode is a bi-functional air electrode which features one or more catalysts that can perform the oxygen reduction reaction (ORR) during discharging and the oxygen evolution reaction (OER) during charging.

ZINC BROMIDE. In zinc bromide batteries, the cathode is made using zinc instead of lithium. The electrolyte is water-based and, therefore, does not pose a fire risk.

ZINC MANGANESE DIOXIDE (Zn-MnO₂). The battery features a Zinc (Zn) anode and a dioxide (MnO₂) cathode with a strongly basic electrolyte (typically potassium hydroxide, KOH), The battery does not present environmental hazards and is EPA-certified for landfill disposal in the United States, and the aqueous electrolyte is non-flammable.

BATTERY-POWERED APPLIANCE. A device or apparatus with an electric motor powered by a battery.

BATTERY-POWERED MICROMOBILITY DEVICES. Products or equipment that include motorized bicycles, motorized scooters and other personal mobility devices intended for one or more riders powered by a lithium-ion or lithium metal battery. The term does not include automobiles and trucks built to DOT requirements.

BATTERY-POWERED INDUSTRIAL EQUIPMENT. A motorized hand truck, floor scrubber, buffer or similar device with an electric motor powered by a battery and intended to be personally driven or guided.

BATTERY-POWERED INDUSTRIAL TRUCK. A forklift, tractor, platform lift truck or similar apparatus with an electric motor powered by a battery.

BATTERY-POWERED AUTOMATED MOBILE PLATFORMS (AMPs). A device with an electric motor powered by a battery that provides an automated function involving lifting, carrying, product picking, towing or similar operations. These devices may also be capable of automatous movement including operating, moving and completing automated functions independently, without direct human guidance or control.

BATTERY POWERED ROBOTIC EQUIPMENT. A machine or device with an electric motor powered by a battery and capable of automatically carrying out a complex series of actions using computer programing. This equipment may be permanently mounted or capable of autonomous movement where they have the means to determine path selection by processing data from sensors, powered by a battery.

BOARDING HOME. A facility that furnishes, in one or more buildings, lodging to three or more persons with disabilities or elderly persons who are unrelated to the owner of the establishment by blood or marriage and provides community meals, light housework, meal preparation, transportation, grocery shopping, money management, laundry services, or assistance with self-administration of medications but does not provide personal care services.

CERTIFICATE OF EXEMPTION. A Certificate of Exemption is awarded to industrial facilities that have a recognized Fire Brigade that meets all applicable Occupational Safety and Health Administration standards (OSHA) 1910. A Certificate of Exemption exempts a facility from fire code regulations affecting or relating to structures, processes, premises, and safeguards relating to construction and operational permits. This exemption does not extend to any other federal, state, or local requirements, nor does the exemption extend to the independent authority of the Fire Marshal to conduct fire and life safety inspections pursuant to Texas Local Government Code 352.

CHILD DAY CARE FACILITY. Buildings and structures or portions thereof occupied by more than five children older than 2 ½ years of age for educational, supervision, or personal care services for less than 24 hours are considered a Group E occupancy. If the facility is operated and occupied for the purpose of 24-hour care, it shall be considered a Group I-4 occupancy.

CRITICAL FACILITIES. Those facilities essential to the preservation of life and property, including, but not limited to, type E occupancies of permanent construction and occupant load greater than 1000, nursing homes, assisted living homes, hospitals, police, fire and emergency response installations, and facilities used for the storage of critical records.

DEDICATED FUNCTION FIRE ALARM CONTROL UNIT. A protected premises fire alarm control unit intended to provide operation of a specifically identified fire safety function, such as an elevator recall control and supervisory control unit, only or any system deemed necessary by the Authority Having Jurisdiction.

ELECTRIC VEHICLE CHARGING STATION. One or more vehicle spaces served by an electric vehicle charging system.

ELECTROCHEMICAL DOUBLE LAYER CAPACITORS (EDLCs). These devices are usually built up from an electrolyte, a separator, and two carbon-based electrodes. Also referred to as supercapacitors, they store energy using either ion adsorption (electrochemical double layer capacitors) or fast surface redox reactions (pseudo-capacitors). They are commonly also called “supercapacitors” or the trademarked “ultracapacitor™” because they store orders of magnitude more power and energy for the same unit mass or volume as a traditional electrolytic capacitor. They can release power and accept charge much faster than batteries for the same footprint, but store much less energy.

FIRE ALARM CONTROL UNIT REPLACEMENT. Any maintenance to an existing fire alarm control unit that involves replacement or upgrade that requires a new installation tag and certification.

FIRE CODE OFFICIAL. The fire code official shall be the person appointed by Commissioners Court as the County Fire Marshal or the employee(s) designated by the County Fire Marshal to perform a task required by this code. The Fire Marshal shall have enforcement authority for this code and shall conduct all required inspections for compliance with this code.

FIRE BRIGADE. Means an organized group of employees who are knowledgeable, trained, and skilled in at least basic firefighting operations. A fire brigade shall be an assembly that meets the requirements of the Occupational Safety and Health Administration standards (OSHA) 1910.

FOSTER GROUP HOME. A child-care facility that provides care for 7 to 12 children on a 24-hour basis.

FOSTER HOME. A child-care facility that provides care for not more than six children on a 24-hour basis.

GENERAL RESIDENTIAL OPERATION. A child-care facility that provides care for more than 7 children for 24 hours a day, including facilities known as children's homes, halfway houses, residential treatment centers, emergency shelters, and therapeutic camps.

GROUP HOME. An establishment in which three or more individuals who are unrelated to the owner or operator of the establishment resides and provides residential care services to residents; and that receives payment or other compensation from a local, state, or federal government entity for providing residential care services. This definition does not include:

Home and Community Support Services as defined by Texas Health and Safety Code 142
Convalescent and Nursing Facilities and Related Institutions required to be licensed by Texas and Safety Code 242

Assisted Living Facilities required to be licensed by Texas Health and Safety Code 247

Intermediate Care Facilities for Individuals with an Intellectual Disability required to be licensed by Texas Health and Safety Code 252

Persons that are exempt from licensing under Texas Health and Safety Code Sections 143.003 (a) (19), 242.003 (3), or 247.004 (4).

Hotels

Retirement Community

Monastery or Convent

Child-care Facility

Family Violence Shelter

Sorority or Fraternity House or other Dormitory Associated with an Institution of Higher Education

INCIPIENT FIREFIGHTING. Firefighting performed inside or outside of an enclosed structure or building when the fire has not progressed beyond incipient stage. The incipient stage refers to the severity of a fire where the progression is in the early stage and has not developed beyond that which can be extinguished using portable fire extinguishers or handlines flowing up to 125 gallons per minute (gpm). A fire is considered to be beyond the incipient stage when the use of thermal protective clothing or self-contained breathing apparatus is required, or a Fire Brigade member is required to crawl on the ground or floor to stay below smoke and heat.

INDUSTRIAL FACILITY. Means any land and any building or other improvement thereon, which shall be maintained and utilized for the mechanical or chemical transformation of organic or inorganic substances into new products, characteristically using power-driven machines and materials handling equipment.

INTERIOR STRUCTURAL FIREFIGHTING. The physical activity of fire suppression, rescue, or both, inside of buildings or enclosed structures, which are involved in a fire situation beyond the incipient stage.

LODGING HOUSE. A one-family dwelling that furnishes lodging, for payment, to three or more persons who are unrelated to the owner of the establishment by blood or marriage and one or more of the occupants are primarily permanent in nature. The term lodging house shall include the following:

Emergency Shelters, Halfway Houses, Flophouses, and Alternative Living Facilities, however, the term shall not include a boarding homes, hotels, motels, bed and breakfast facilities, or single-family residential building, condominium, or townhouse that is owner-occupied for at least three months of the year.

MICROMOBILITY CHARGING EQUIPMENT. An electrical device intended for recharging batteries utilized in battery-powered micromobility devices. This equipment is intended to charge multiple battery-powered micromobility devices simultaneously.

MID-RISE BUILDING. A building with an occupied floor located more than 2 stories and less than 75 feet (22 860 mm) above the lowest level of fire department vehicle access.

MOBILE FOOD VENDOR VEHICLE. Vehicles, trailers, and push carts which are used for the preparation, serving or sales of consumable items also know as Mobile Food Units (MFUs).

MOBILE FOOD VENDOR VEHICLE PARK. A property set up with the intent to operate five or more mobile food vendor vehicles and could include buildings, restrooms, common dining areas or other supporting buildings or structures.

ASSEMBLY GROUP A-3. Assembly uses intended for worship, recreation or amusement and other assembly uses not classified elsewhere in Group A, including, but not limited to:

- Amusement arcades
- Art galleries
- Bowling alleys
- Community halls
- Courtrooms
- Dance halls (not including food or drink consumption)
- Exhibition halls
- Funeral parlors
- Greenhouses with public access for the conservation and exhibition of plants
- Gymnasiums (without spectator seating)
- Indoor swimming pools (without spectator seating)
- Indoor tennis courts (without spectator seating)
- Lecture halls
- Libraries
- Martial Arts/Dance Studios/Fitness
- Museums
- Places of religious worship
- Pool and billiard parlors
- Waiting areas in transportation terminals

INSTITUTIONAL GROUP I-1. Institutional Group I-1 occupancy shall include buildings, structures or portions thereof for more than 16 persons, excluding staff, who reside on a 24-hour basis in a supervised environment and receive custodial care. Buildings of Group I-1 shall be classified as one of the occupancy conditions indicated below and shall comply with Section 420 of the *International Building Code*. This group shall include, but not be limited to, the following:

- Alcohol and drug centers
- Assisted living facilities
- Congregate care facilities
- Convalescent facilities

Group homes
 General residential operation
 Halfway houses
 Residential board and care
 Social rehabilitation facilities

Occupancy Conditions. Buildings of Group I-1 shall be classified as one of the following occupancy conditions and shall comply with Section 407 of the International Building Code:

Condition 1. This occupancy condition shall include buildings in which all persons receiving custodial care who, without any assistance, are capable of responding to an emergency situation to complete building evacuation.

Condition 2. This occupancy condition shall include buildings in which there are any persons receiving custodial care who require limited verbal or physical assistance while responding to an emergency situation to complete building evacuation.

INSTITUTIONAL GROUP I-2. Institutional Group I-2 occupancy shall include buildings and structures used for medical care on a 24-hour basis for more than five persons who are not capable of self-preservation, and not otherwise classified as a This group shall include, but not be limited to, the following:

Foster care facilities
 Detoxification facilities
 Hospitals
 Nursing homes
 Psychiatric hospital
 Child and Adult day care facilities, operated on a 24-hour basis

Occupancy Conditions. Buildings of Group I-2 shall be classified as one of the following occupancy conditions and shall comply with Section 407 of the International Building Code:

Condition 1. This occupancy condition shall include facilities that provide nursing and medical care but do not provide emergency care, surgery, obstetrics, or in-patient stabilization units for psychiatric or detoxification, including, but not limited to, nursing homes and foster care facilities.

Condition 2. This occupancy condition shall include facilities that provide nursing and medical care and could provide emergency care, surgery, obstetrics, or inpatient stabilization units for psychiatric or detoxification, including, but not limited to, hospitals.

RESIDENTIAL GROUP R-3. Residential Group R-3 occupancies where the occupants are primarily permanent in nature and not classified as Group R-1, R-2, R-4 or I, including:

Buildings that do not contain more than two dwelling units
 Community Homes in compliance with Human Resource Code Chapter 123
 Congregate living facilities (non-transient) with 16 or fewer occupants
 Convents
 Dormitories
 Fraternities and sororities
 Monasteries
 Newly Constructed and/or Substantial Improved Boarding and Lodging houses shall comply with the Harris County Fire Code.
 Conversion of an existing single-family dwelling into a Boarding or Lodging house.

Lodging houses (transient) with five or fewer guestrooms and 10 or fewer occupants shall be classified as a single-family dwelling for the purpose of this code and comply with all of the following:

1. The structure was originally constructed as a single-family dwelling.
2. The structure has an appraised real property record with Harris County Appraisal District for the past 2 years as a Residential, Single-Family use.
3. The structure is being converted into a Lodging House.
4. The structure is in compliance with Local Government Code 233 Subchapter F “Residential Building Code” or other recognized code.
5. The structure is in compliance with Chapter 11 of the Harris County Fire Code.
6. The structure is in compliance with all deed restrictions.
7. Subjected to the Building and/or Fire Code Official for approval.

Structures not complying with all items listed or determined by the County Engineer or Fire Code Official not approvable shall be classified as new construction or substantial improvement per the Harris County Fire Code.

Boarding Houses in compliance with Chapter 260 of the Health & Safety Code shall be classified as a single-family dwelling for the purpose of this code and comply with all of the following:

1. The structure was originally constructed as a single-family dwelling.
2. The structure has an appraised real property record with Harris County Appraisal District for the past 2 years as a Residential, Single-Family use.
3. The structure is being converted into a Boarding Home.
4. The structure is in compliance with Local Government Code 233 Subchapter F “Residential Building Code” or other recognized code.
5. The structure is in compliance with Chapter 11 of the Harris County Fire Code.
6. The structure is in compliance with all deed restrictions.
7. The occupancy load shall not be less than 200 square feet per person.
8. The occupancy load shall not be greater than 16 for all occupants living within the dwelling.
9. Subjected to the Building and/or Fire Code Official for approval.

Structures not complying with all items listed or determined by the County Engineer or Fire Code Official not approvable shall be classified as new construction or substantial improvement per the Harris County Fire Code.

RESIDENTIAL GROUP R-4. Residential Group R-4 shall include newly constructed buildings, structures or portions thereof for more than five but not more than 16 persons, excluding staff, who reside on a 24-hour basis in a supervised residential environment and receive custodial care. Buildings of Group R-4 shall be classified as one of the occupancy conditions indicated below. This group shall include, but not be limited to, the following:

- Alcohol and drug centers
- Assisted living facilities
- Congregate care facilities
- Halfway houses
- residential board and care facilities
- Social rehabilitation facilities

Group R-4 occupancies shall meet the requirements for construction as defined for Group R-3, except as otherwise provided for in the *International Building Code*.

Condition 1. This occupancy condition shall include buildings in which all persons receiving custodial care, without any assistance, are capable of responding to an emergency situation to complete building evacuation.

Condition 2. This occupancy condition shall include buildings in which there are any persons receiving custodial care who require limited verbal or physical assistance while responding to an emergency situation to complete building evacuation.

PERSONAL CARE SERVICE. Assistance with feeding, dressing, moving, bathing, or other personal needs or maintenance, or general supervision or oversight of the physical and mental well-being of a person who needs assistance to maintain a private and independent residence in an assisted living facility or who needs assistance to manage the person's personal life, regardless of whether a guardian has been appointed for the person.

PREMISES. A building together with its land and outbuildings, or open land occupied by a business or open for public use regardless of the connection with a business.

READILY ACCESSIBLE. Accessible without any special tools, key, knowledge or equipment to operate.

RECOGNIZED FIRE BRIGADE. An approved Facility Fire Brigade which may be provided in several ways, including the following:

- In-house (Site Owned) – Industrial Fire Brigades that may be composed of full-time, volunteer or assigned employees of the facility.
- By agreement – Facilities that may be located inside a host facility. In these cases, the host facility has a contract with the tenant facility to provide emergency response services.
- By shared services – Facilities, as described in provision by agreement, to maintain a shared emergency response team. In these cases, the Brigade is a combination of Facilities located inside a host facility or located adjacent and functioning as one Fire Brigade.
- By Contract Services – Facilities that hire a full-time contract Fire Service Company or Cooperative Group.

RESIDENTIAL CARE SERVICES. Shelter, protection, meals, health care, mobility assistance, and personal care services, including bathing, dressing, and eating.

SINGLE-FAMILY DWELLING. Single family residential shall mean the use of a lot with one building designed for and containing not more than two separate units with facilities for living, sleeping, cooking, and eating therein. A lot upon which is located a free-standing building containing one dwelling unit and a detached secondary dwelling unit of not more than 900 square feet also shall be considered single family residential. A building that contains one dwelling unit on one lot that is connected by a party wall to another building containing one dwelling unit on an adjacent lot shall be single family residential.

SPECIAL EVENT. Any organized, temporary event with an estimated number of participants and spectators of 100 or more people set up outdoors in a parking lot, side of the roadway, open land, or involves using a building for an assembly of 50 or more people in a building not equipped or intended to be utilized for this purpose.

START OF CONSTRUCTION. Construction begins on the date that ground is broken for a building, or if no ground is broken, on the date that:

1. The first materials are added to the original property;
2. Foundation pilings are installed on the original property; or
3. A manufactured building or relocated structure is placed on a foundation on the original property.

STRUCTURE. Something built or constructed to support or shelter any occupancy.

SUBSTANTIAL IMPROVEMENT. A “Substantial Improvement” is

- a) the repair, restoration, reconstruction, improvement, or remodeling of a public building, a commercial establishment, or a multifamily residential dwelling consisting of four or more units for which the cost exceeds 50% of the building’s value according to the certified tax appraisal roll for the county for the year preceding the year in which the work was begun; or
- b) a change in occupancy classification involving a change in the purpose or level of activity in a building, including the renovation of a warehouse into a loft apartment. For purposes of determining if an improvement is a Substantial Improvement, the applicant for a permit must submit data reflecting cost of the improvement, restoration, reconstruction, improvement, or remodeling. Costs shall include the value of all labor and materials. A permit is required prior to the start of any Substantial Improvement. For purposes of this Code, Substantial Improvement begins on the date that the repair, restoration, reconstruction, improvement, or remodeling or the change in occupancy classification begins or on the date materials are first delivered for that purpose.

TEMPORARY. Any construction of a building or structure, tent or membrane structures, or any planned event which will be in operation for no more than 180 days.

TRAINING. The process of making proficient through instruction and hands-on practice in the operation of equipment, including respiratory protection equipment, that is expected to be used and in the performance of assigned duties.

UNINCORPORATED AREA. Unincorporated Area means the area in Harris County, Texas, which is not within an incorporated area of a city, town, and village or within 2,500 feet of the centerline of the Houston Ship Channel.

CHAPTER 3 - GENERAL REQUIREMENTS

SECTION 308.1.4.1 IS ADDED TO READ AS FOLLOWS:

308.1.4.1 New and existing apartments and multi-tenant housing. Charcoal burners, LP-gas cooking appliances, open flame cooking devices, gas or fuel fired heaters or any other carbon monoxide producing devices shall not be stored or used in a new or existing Group R2 apartment buildings or multi-tenant housing, including the balcony, patio or within 10 feet of these occupancies.

SECTION 313.2 IS AMENDED TO READ AS FOLLOWS:

313.2 Group R occupancies. Equipment such as vehicles, portable generators, lawn-care equipment and portable cooking appliances powered by flammable liquids, Class II combustible liquids or compressed flammable gases shall not be stored or operated within the living space, balconies or patios, or within 10 feet of Group R buildings.

Exception: Storage within an attached garage complying with this code.

SECTION 319.1 IS AMENDED TO READ AS FOLLOWS:

319.1 General. Mobile food vendor vehicles and mobile food units (MFUs) shall comply with this section.

SECTION 319 IS AMENDED BY ADDING THE FOLLOWING SECTIONS:

319.1.1 Location. Mobile food vendor vehicles used on a property shall comply with the following:

1. Mobile food vendor vehicles shall not be parked beneath or within 20 feet of a structure while operating.
2. Accessory weather protection cannot exceed 700 square feet and shall be open on at least three sides.
3. The Mobile food vendor vehicles shall have a separation distance of 20 feet or more from other MFUs.
4. Mobile food vendor vehicles shall not be parked within 20 feet of combustible waste material while operating.
5. Mobile food vendor vehicles shall not be parked within 20 feet of other vehicles while operating.
6. Mobile food vendor vehicles utilizing gas appliances, or any solid fuel ignition source shall be separated a minimum distance of 50 feet from a dispensing point or filling point of flammable and combustible liquids while in operation.
7. Mobile food vendor vehicles in operation shall be moveable by their usual means of movement and shall have tires that are in good condition.

319.1.2 Labeling. All mobile food vendor vehicles shall display signs and stickers as follows:

1. Required signs shall be in English.
2. Harris County Fire Marshal inspection sticker. The inspection sticker must not be tampered with, obstructed or removed, and cannot be transferred to another MFU.

319.1.3 Egress. All egress pathways in the mobile food vendor vehicle shall provide a minimum clear opening width of 28 inches.

319.1.3.1 Unobstructed egress. The doors in the egress pathway must provide unobstructed egress from the inside and shall not be lockable from the outside with a padlock or other such locking device.

Exception: The padlock or other such locking device is locked in the open position while in operation.

319.8.2.1 Gas systems. Where LP-gas or CNG cylinders are obstructed from view by an enclosure or any other obstruction, a label shall be posted with the words "LP-Gas," "PROPANE" or similar verbiage on the exterior of the enclosure.

319.8.2.2 Gas storage. LP-gas and CNG containers shall not be installed or stored within the interior of the mobile food vendor vehicle.

319.8.5.1 No smoking. Smoking is prohibited within 10 feet of a mobile food vendor vehicle.

319.10.4 Maintenance. The mobile food vendor vehicle shall be stable in construction and may not be damaged in a way that it could cause a hazard to people or property.

319.11 Electrical. All electrical components shall be in compliance with Section 603 and NFPA 70.

319.12 Solid fuel cooking. All solid-fuel cooking appliances and operations shall be in accordance with NFPA 96, current addition.

319.12.1 Solid fuel storage. Mobile food vendor vehicles may only store up to one day's supply of solid fuel.

SECTION 322 IS ADDED TO READ AS FOLLOWS:

SECTION 322 BATTERY STORAGE

322.1 General. The storage of batteries shall comply with Section 322.

Exceptions:

1. New or refurbished batteries installed in the equipment, devices, or vehicles they are designed to power.
2. New or refurbished batteries packed for use with the equipment, devices, or vehicles they are designed to power.
3. Batteries in original retail packaging that are rated at 300 watt-hours or less for lithium-ion batteries or contain 25 grams or less of lithium metal for lithium metal batteries.
4. Temporary storage of batteries or battery components during the battery manufacturing process prior to completion of final quality control checks.
5. Temporary storage of batteries during the vehicle manufacturing or repair process.
6. Batteries in use, staged for use after charging, or charging for use with equipment that are rated at 300 watt-hours or less for lithium-ion batteries or contain 25 grams or less of lithium metal for lithium metal batteries.

322.1.1 Lithium-ion and lithium metal batteries. The storage of Lithium-ion and lithium metal batteries shall comply with Sections 322.2 through 322.4.3.3.

322.1.2 Other battery types. Batteries in storage, other than Lithium-Ion or Lithium metal batteries, shall comply with 322.5 through 322.5.6.

322.2 Permits. Permits shall be required for an accumulation of more than 15 cubic feet (0.42 m³) of lithium-ion and lithium metal batteries, other than batteries listed in the exceptions to Section 322.1, as set forth in Section 105.5.58.

322.3 Fire safety plan. A fire safety plan shall be provided in accordance with Section 403.10.6. In addition, the fire safety plan shall include emergency response actions to be taken upon detection of a fire or possible fire involving lithium-ion or lithium metal battery storage.

322.4 Storage requirements. Lithium-ion and lithium metal batteries shall be stored in accordance with Section 322.4.1. 322.4.2 or 322.4.3, as applicable.

322.4.1 Limited indoor storage in containers. A maximum volume of 15 cubic feet (0.42 m³) of lithium-ion or lithium metal batteries per fire area shall be permitted where stored in accordance with any of the methods provided in Sections 322.4.1.1 through 322.4.1.3.

322.4.1.1 Used or unwanted battery collection. Areas where used or unwanted lithium-ion or lithium metal batteries are collected from the public or employees shall comply with all of the following:

1. Containers shall be open top and constructed of noncombustible materials or shall be approved for battery collection.
2. Individual containers and groups of containers shall not exceed a capacity of 7.5 cubic feet (0.21 m³).
3. A second container or group of containers shall be separated by not less than 3 feet (914 mm) of open space or 10 feet (3048 mm) of space that contains combustible materials.
4. Containers shall be located not less than 5 feet (1524 mm) from exits or exit access doors.

322.4.1.2 Waste storage. Waste batteries that are packaged in accordance with DOTn shipping requirements.

322.4.1.3 Miscellaneous storage. Limited storage of lithium-ion or lithium metal batteries, other than collection of used or unwanted batteries, or waste storage, shall comply with any of the following:

1. Stored in containers complying with Section 322.4.1.1.
2. Stored in original wholesale packaging or containers complying with DOTn regulations.
3. Approved battery storage cabinets.
4. Other approved storage methods.

322.4.2 Indoor storage areas. Indoor storage areas for lithium-ion and lithium metal batteries, other than those complying with Section 320.4.1, shall comply with Sections 322.4.2.1 through 322.4.2.6.

322.4.2.1 Technical opinion and report. A technical opinion and report complying with Section 104.8.2 shall be prepared to evaluate the fire and explosion risks associated with the indoor storage area and to make recommendations for fire and explosion protection. The report shall be submitted to the fire code official and shall require the fire code official's approval prior to issuance of a permit. In addition to the requirements of Section 104.8.2, the technical opinion and report shall specifically evaluate the following:

1. The potential for deflagration of flammable gases released during a thermal runaway event.
2. The basis of design for an automatic sprinkler system or other approved fire suppression system. Such design basis shall reference relevant full-scale fire testing or another approved method of demonstrating sufficiency of the recommended design.

322.4.2.2 Construction requirements. Where indoor storage areas for lithium-ion and lithium metal batteries are located in a building with other uses, battery storage areas shall be separated from the remainder of the building by 2-hour rated fire barriers or horizontal assemblies. Fire barriers shall be constructed in accordance with Section 707 of the *International Building Code*, and horizontal assemblies shall be constructed in accordance with Section 711 of the *International Building Code*.

Exceptions:

1. Where battery storage is contained in one or more approved prefabricated portable structures providing a complete 2-hour fire-resistance-rated enclosure, fire barriers and horizontal assemblies are not required.
2. Where battery storage is limited to new batteries in packaging that has been demonstrated to and approved by the fire code official as sufficient to isolate a fire in packaging to the package interior, fire barriers and horizontal assemblies are not required.

322.4.2.3 Fire protection systems. Indoor storage areas for lithium-ion and lithium metal batteries shall be protected by an automatic sprinkler system complying with Section 903.3.1.1 or an approved alternative fire-extinguishing system.

322.4.2.4 Fire alarm systems. Indoor storage areas for lithium-ion and lithium metal batteries shall be provided with an approved automatic fire detection and alarm system complying with Section 907. The fire detection system shall use air-aspirating smoke detection, radiant energy-sensing fire detection or both.

322.4.2.5 Explosion control. Where the approved technical opinion and report required by Section 322.4.2.1 recommends explosion control, explosion control complying with Section 911 shall be provided.

322.4.2.6 Reduced requirements for storage of partially charged batteries. Indoor storage areas for lithium-ion and lithium metal batteries with a demonstrated state of charge not exceeding 30 percent shall not be required to comply with Section 322.4.2.1, 322.4.2.2 and 322.4.2.5, provided that procedures for limiting and verifying that the state of charge will not exceed 30 percent have been approved.

322.4.3 Outdoor storage. Outdoor storage of lithium-ion or lithium metal batteries shall comply with Sections 322.4.3.1 through 322.4.3.6.

322.4.3.1 Technical opinion and report. A technical opinion and report complying with Section 104.8.2 shall be prepared to evaluate the fire and explosion risks associated with outdoor storage of lithium-ion and lithium metal batteries and to make recommendations for fire and explosion protection. The report shall be submitted to the fire code official and shall require the fire code official's approval. In addition to the requirements of Section 104.8.2, the technical opinion and report shall evaluate all of the following:

- a. Compliance with this section.
- b. Firefighting access and water supply for emergencies involving outdoor battery storage.
- c. Outdoor battery fire and explosion hazards
- d. Hazards involving flying debris during fire incidents igniting adjacent storage areas, buildings, or other exposure hazards.
- e. Handling, storage and monitoring of damaged batteries and post-fire monitoring.

322.4.3.2 Distance from storage to exposures. Outdoor storage of lithium-ion or lithium metal batteries shall comply with one of the following:

1. Battery storage shall be located not less than 20 feet (6096 mm) from any building, lot line, public street, public alley, public way or means of egress.
2. Battery storage shall be located not less than 3 feet (914 mm) from any building, lot line, public street, public alley, public way or means of egress, where the battery storage is separated by a 2-hour fire-resistance-rated assembly without openings or penetrations and extending 5 feet (1524 mm) above and to the sides of the battery storage area.
3. Battery storage shall be located not less than 3 feet (914 mm) from any building, lot line, public street, public alley, public way or means of egress, where batteries are contained in approved, prefabricated portable structures providing a complete 2-hour fire-resistance-rated enclosure.
4. A maximum of 15 cubic feet (0.42 m³) of lithium-ion or lithium metal batteries or cells packaged in accordance with DOTn shipping requirements where not less than 3 feet (914 mm) from any building with non-combustible exterior walls, lot line, public street, public alley, public way or means of egress.

322.4.3.3 Storage area size limits and separation. Outdoor storage piles for lithium-ion or lithium metal batteries shall not exceed 900 square feet (83.6 m²). The height of battery storage in such areas shall not exceed 10 feet (3048 mm). Multiple battery storage areas shall be separated from each other by not less than 20 feet (6096 mm) of open space.

322.4.3.4 Fire detection. Outdoor storage piles for lithium-ion or lithium metal batteries exceeding an aggregate area of 900 square feet (83.6 m²), regardless of whether such areas are open, under weather protection or in a prefabricated portable structure, shall be provided with an approved automatic fire detection and alarm system complying with Section 907. The fire detection system shall use radiant energy-sensing fire detection or thermal imaging detection.

322.4.3.5 Containers. Containers for outdoor storage of used or waste batteries shall be open-top and constructed of noncombustible materials; containers complying with DOTn regulations for lithium-ion and lithium metal transportation or shall be approved for battery collection and storage.

322.4.3.6 Weather protection. Where weather protection is provided for sheltering outdoor lithium-ion or lithium metal battery storage or use areas, such areas shall be considered outdoor storage or use where the weather protection structure complies with all of the following:

1. Walls shall not obstruct more than one side or more than 25 percent of the perimeter of the storage area.
2. The overhead structure shall be of approved noncombustible construction with a maximum area of 3,600 square feet (334.5 m²).
3. The distance from the structure to buildings, lot lines, public ways or means of egress to a public way shall be not less than the distance required for an outside storage in Section 322.4.3.2.
4. Weather protection structures used for sheltering lithium-ion or lithium metal battery storage shall be separated from lithium ion or lithium metal battery piles or additional weather protection structures used to shelter lithium-ion or lithium metal battery storage by no less than 20 feet (4572mm).
5. The height of battery storage in such areas shall not exceed 10 feet (3048 mm).

322.5 Other battery types general. Batteries in storage, other than lithium-ion or lithium metal batteries, with a volume more than 15 cubic feet (0.42 m³) within a fire area shall be in compliance with 322.5.1 through 322.5.6.

322.5.1 Structural and seismic design. Storage shall be protected against accidental dislodgement. Racks and shelving used for storage shall be designed in accordance with the *International Building Code* as applicable.

322.5.2 Impact protection. Where battery storage is subject to vehicle traffic, the storage shall be protected against impact in accordance with Section 312 or other approved method.

322.5.3 Battery charging. Battery charging shall be performed in accordance with manufacturer instructions utilizing listed or approved charging devices.

322.5.4 Mechanical exhaust system. Where battery charging can produce flammable gases a mechanical exhaust system shall be provided in accordance with the *International Mechanical Code*. The mechanical exhaust system shall be designed to limit the maximum concentration of flammable gas to 25 percent of the lower flammable limit (LFL) of the total volume of the room, or area during the worst-case event of simultaneous charging of batteries at the maximum charge rate, in accordance with nationally recognized standards.

322.5.5 Spill control. Spill control supplies shall be provided to control liquid electrolyte spills. The method shall be capable of controlling a spill from the single largest battery stored or handled.

322.5.6 Hazard warning signage. The entrances to battery storage areas shall be provided with warning signage that states, "BATTERY STORAGE AREA", "ENERGIZED ELECTRICAL DEVICES" and lists the types of batteries present. The size, color and lettering shall be approved.

SECTION 323 IS ADDED TO READ AS FOLLOWS:

SECTION 323

BATTERY-POWERED DEVICES, TRUCKS, EQUIPMENT AND APPLIANCES

323.1 General. Battery-powered micromobility devices, battery-powered industrial trucks, battery-powered industrial equipment, battery-powered robotic equipment and battery-powered appliances shall be operated, charged and maintained in accordance with this section.

Exceptions:

1. Batteries with a capacity less than 300 Whs.
2. Storage and use of powered mobility devices, provided that such devices are for personal use by its owner.

323.1.1 Operational permit. An operational permit is required in accordance with Section 105.5 for battery storage, use and charging operations regulated by this section.

323.1.2 Battery charging operations. Battery charging operations shall be charged in accordance with their device listing and the manufacturer's instructions using only the original equipment manufacturer-supplied charging equipment or charging equipment in accordance with the listing and manufacturer's instructions.

323.1.2.1 Listing. Battery-powered equipment shall be listed and labeled in accordance with this section, where applicable and shall be operated and charged in accordance with its listing and the manufacturer's instructions.

323.1.2.1.2 Battery-powered micromobility devices. Battery-powered micromobility devices shall be listed and labeled in accordance with UL 2272 or UL 2849, as applicable.

323.1.2.1.3 Battery-powered Automated mobile platforms (AMPs). Battery-powered Automated mobile platforms (AMPs) shall be listed and labeled in accordance with UL 3100.

323.1.2.1.4 Battery-powered robotic equipment. Battery-powered robotic equipment shall be listed and labeled in accordance with UL 3300.

323.1.2.1.5 Portable battery-powered equipment and appliances. Where installed or used, portable battery-powered equipment and appliances shall be listed and labeled in accordance with UL 2595 or the applicable standard for its use.

323.1.2.1.6 Hazardous (classified) locations. Battery powered micromobility devices, trucks, equipment, appliances and battery powered tools operated in in areas designated as hazardous (classified) locations in accordance with NFPA 70 shall be listed and labeled or approved for use in the environment intended.

323.1.3 Ventilation. Mechanical exhaust ventilation to the exterior shall be provided at the source in the charging location in accordance with Chapter 5 of the *International Mechanical Code* to prevent the dangerous accumulation of any flammable or other hazardous gases that are produced or discharged by the battery during normal charging operation.

323.1.4 Spill control and neutralization. Approved methods and materials shall be provided for the control and neutralization of spills of electrolyte or other hazardous materials in areas containing batteries as follows:

1. For batteries with free-flowing electrolyte, the method and materials shall be capable of neutralizing a spill of the total capacity from the largest cell or block to a pH between 5.0 and 9.0.2.
2. For batteries with immobilized electrolyte, the method and material shall be capable of neutralizing a spill of 3.0 percent of the capacity of the largest cell or block in the room to a pH between 5.0 and 9.0.

323.1.5 Battery charging locations. Charging of any battery powered industrial equipment, battery powered industrial truck, battery powered robotic equipment or battery-powered appliance in any occupancy shall be in an approved outdoor location or in an indoor area that complies with Section 323.2.

323.1.5.1 Prohibited locations. Repair or charging operations for business purposes shall not be permitted in the following locations:

1. In a detached one- and two-family dwelling or townhouse occupied under the International Residential Code or R2, R3, or R4 Occupancies.
2. In sleeping rooms or means of egress paths of R-1 Occupancies.

323.2 Requirements for indoor charging locations. Indoor charging operations shall be provided with fire detection, fire suppression and other hazard mitigation measures as required by this Section.

323.2.1 Charging requirements for lead-acid batteries. Indoor charging areas for lead-acid batteries shall comply with Section 323.1 and 323.2.2.8.

323.2.2 Charging requirements for lithium-ion and lithium metal batteries. Indoor charging areas for lithium-ion and lithium metal batteries shall comply with Section 323.1 and 323.2.2.1 through 323.2.2.8.

323.2.2.1 Fire sprinklers. The fire area containing the indoor charging location shall be protected by an automatic sprinkler system installed in accordance with Section 903.3.1.1.

323.2.2.2 Fire detection. The indoor charging location shall be protected by a fire alarm system utilizing a smoke detection system, thermal imaging system or radiant energy-sensing fire detection system.

323.2.2.3 Electrical receptacles. The indoor charging location shall be provided with sufficient electrical receptacles to allow the charging equipment for each device to be directly connected to a receptacle installed in accordance with NFPA 70. The use of extension cords or relocatable power taps shall not be permitted.

323.2.2.4 Prohibited storage. Storage of combustible materials, combustible waste or hazardous materials shall not be permitted in the indoor charging location.

323.2.2.5 Means of egress. The charging operation shall not be conducted in or obstruct any required means of egress.

323.2.2.6 Storage enclosure. Removable batteries shall not be stacked or stored in an enclosed cabinet unless the cabinet is listed or is a specially designed battery containment enclosure approved for such purpose.

323.2.2.7 Battery charging separation. A minimum distance of 18 inches (457.2 mm) shall be maintained between each removable storage battery during charging operations unless each battery is isolated from neighboring batteries by an approved fire-resistant material or is within a specially designed rack or cabinet designed and approved for such purpose.

323.2.2.8 Device charging separation. A minimum of 18 inches (457.2 mm) shall be maintained between the locations of the batteries on each powered micromobility device, industrial truck, equipment, robot or appliance during charging operations.

323.3 Repairs. Repairs of battery-powered micromobility devices, battery-powered industrial trucks, battery-powered industrial equipment, battery-powered appliances and battery-powered robotic

equipment shall be performed in approved locations outside of buildings or within buildings in areas specifically approved for that purpose.

323.4 Replacement batteries and chargers. Replacement batteries and chargers shall be equipment supplied by the manufacturer or the replacement battery or charger shall be in compliance with the manufacturer's instructions for the equipment or device.

323.5 Fire safety plan. A fire safety plan shall be provided in accordance with Section 403.10.6. In addition, the fire safety plan shall include emergency response actions to be taken upon detection of a fire or possible fire involving lithium-ion or lithium metal battery storage.

323.6 Battery containment enclosures. Where provided to reduce separation distances required in Sections 323.2.2.7 or 323.2.2.8, containment enclosures for storage or charging of lithium-ion batteries or lithium-ion battery powered appliances shall comply with one of the following:

1. The enclosure is listed and labeled in accordance with UL 1487.
2. The enclosure is specially designed and approved for such purpose.

323.7 Battery exchange. Equipment or facilities providing battery exchange operations shall comply with Sections 323.7.1 and 323.7.2 and be approved by the fire code official.

323.7.1 Permit. Facilities providing battery exchange programs or equipment provided for exchange of lithium-ion batteries shall require an operational permit in accordance with Section 105.5.53.

323.7.2 Listed and labeled. Charging equipment utilized for battery exchange facilities or equipment shall be listed and labeled in accordance with UL 4900.

323.8 Damaged equipment. The charging of damaged devices or batteries shall be prohibited.

323.9 Battery-powered micromobility device batteries and chargers. The batteries and chargers used with battery-powered micromobility devices shall comply with this section.

323.9.1 Batteries and battery chargers. Batteries and battery chargers shall be in accordance with 323.9.1.1 through 323.9.1.4 as applicable.

323.9.1.1 Original equipment manufacturer's devices. Batteries and battery chargers shall be provided as part of the listed battery powered micromobility device. This includes both non-removable and removable batteries.

323.9.1.2 Replacement batteries. Batteries not provided as part of the listed battery-powered micromobility device shall be compatible with the listed battery-powered micromobility device in accordance with the battery-powered micromobility device manufacturer's instructions.

323.9.1.3 Replacement battery chargers. Single unit battery changers not provided as part of the listed battery-powered micromobility device shall be compatible with the listed battery-powered micromobility device in accordance with the battery-powered micromobility device manufacturer's instructions.

323.9.1.4 Aftermarket devices. The use of batteries and battery chargers that do not comply with 323.9.1.2 and 323.9.1.3 shall be prohibited.

323.10 Micromobility charging equipment. Battery-powered micromobility device charging equipment that are multi-unit and do not comply with 323.9.1 shall be listed and labeled in accordance with UL 4900 and installed and operated in accordance with its listing and the manufacturer's instructions. Micromobility charging equipment shall only be used to charge the battery-powered micromobility devices identified in the instructions. The installation location shall be approved by the fire code official.

SECTION 324 IS ADDED TO READ AS FOLLOWS:**SECTION 324****LITHIUM-ION AND LITHIUM METAL BATTERY RESEARCH, TESTING, MANUFACTURING OR RECYCLING**

324.1 General. The research, testing, manufacturing, or recycling of lithium-ion and lithium metal batteries shall comply with this Section.

324.2 Scope. Any occupancy where one or more of the following operations involving lithium-ion or lithium metal battery components are conducted shall comply with Sections 324.3 through 324.11.

1. Where batteries or cells are tested, modified, or subjected to load testing, cycling, thermal tests, short circuit, impact, penetration, crushing, overcharge, shock, vibration, or similar conditions.
2. Where battery components are researched, tested, or developed.
3. Where batteries are manufactured.
4. Where batteries are recycled, dismantled, repaired, or refurbished.

324.2.1 Collection and collating facilities. Facilities where batteries are only collected and collated for offsite recycling processing or disposal are not regulated by this section. Such facilities shall comply with Section 322.

324.3 Permits. An operational permit in accordance with Section 105.5.58 shall be required.

324.4 Fire Safety Plan. A fire safety plan shall be provided in accordance with Section 403.10.6.

324.5 Technical opinion and report. A technical opinion and report complying with Section 104.8.2 shall be prepared to evaluate the fire and explosion risks associated with research, testing, manufacturing, and recycling and to make recommendations including the necessary mitigation measures for all identified risks and for the fire and explosion protection design basis. The report shall be submitted to the fire code official for approval. The technical opinion and report shall specifically evaluate the following:

1. Compliance with Section 322.
2. Hazardous materials storage, use, and handling, including Group H Occupancy requirements, where applicable.
3. Combustible dust hazards, including cathode and anode powders; notching and cutting equipment; and other processes that involve or generate combustible dusts or powders, as applicable.
4. Storage, distribution, and dispensing of flammable liquids or gases, including electrolytes as applicable.
5. Protection of areas and equipment where formation, aging, and testing of batteries or cells occurs, including fire suppression, fire or gas detection, thermal runaway prevention, ventilation, and emergency response to runaway cells.
6. Storage of batteries or cells, including high piled storage requirements where storage exceeds 6 feet (1.82 m) in height.
7. Firefighting access and water supply.
8. Hazards involving flying debris during fire incidents igniting adjacent storage areas, buildings, or other exposure hazards.
9. The basis of design for an automatic sprinkler system or other approved fire suppression system. Such design basis shall reference relevant full-scale fire testing or another approved method of demonstrating sufficiency of the recommended design.
10. An evaluation of the suitability of the equipment used.
11. Handling, storage, and monitoring of damaged, defective, recalled, and out-of-specification batteries and cells.
12. Other items as required by the fire code official.

324.6 Storage. Lithium metal and lithium-ion batteries shall be stored in accordance with Section 322.

324.7 Equipment. Equipment used in research, testing, recycling, and manufacturing of lithium-ion and lithium metal batteries shall be designed for the intended use and evaluated in the technical report.

324.8 Fire protection. An approved automatic sprinkler system complying with Section 903.3 shall be provided in buildings where lithium ion or lithium metal batteries are researched, tested, manufactured, or recycled.

324.9 Fire detection. An approved automatic fire detection and alarm system complying with Section 907 shall be provided in buildings where lithium ion or lithium metal batteries are researched, tested, manufactured, or recycled.

324.10 Fire resistant separation. Indoor rooms or areas where any of the following operations are conducted shall be separated from other portions of the building by 2-hour fire-resistance-rated fire barriers and horizontal assemblies. Fire barriers shall be constructed in accordance with Section 707 of the International Building Code, and horizontal assemblies shall be constructed in accordance with Section 711 of the International Building Code.

1. Research or manufacturing areas where more than 2kWh of lithium ion or lithium metal batteries are charged, tested, or undergo processes such as formation and aging.
2. Where any quantity of batteries or cells undergo destructive testing such as thermal, short circuit, impact, nail penetration, crushing, overcharge, or similar testing that can reasonably be expected to result in failure of the battery or cell.
3. Where any quantity of lithium ion or lithium metal batteries undergo recycling processes including dismantling, repair, refurbishing, incineration, or similar processes.

324.11 Hazardous materials. Hazardous materials stored, used, handled, and generated in lithium ion and lithium metal battery manufacturing, research, testing, or recycling shall be in accordance with Chapters 50 through 67.

SECTION 326 IS ADDED TO READ AS FOLLOWS:

SECTION 325 MOBILE FOOD VENDOR VEHICLE PARKS

325.1 Mobile food vendor vehicle parks. A mobile food vendor vehicle park is an outdoor assembly occupancy and is required to have an operational permit set forth in Section 105.5.

325.1.1 Buildings. Construction permits and operational permits required for buildings and structures within, or associated with, a mobile food vendor vehicle park shall be obtained separately from the permits for the mobile food vendor vehicle park or mobile food vendor vehicles.

325.2 No Smoking. Smoking is prohibited within 10 ft of any mobile food vendor vehicles or Membrane structures within the mobile food vendor vehicle park. "NO SMOKING" signs shall be posted in conspicuous places throughout the mobile food vendor vehicle park.

325.3 Egress. Mobile food vendor vehicle parks shall be arranged to provide clear egress pathways with a minimum width of 44 inches.

325.4 Occupant load. Occupant load signs shall be posted for all mobile food vendor vehicle park areas where the perimeter or boundary is enclosed more than 50 percent, regardless of whether there is a roof. The occupant load shall be calculated at 15 square feet per occupant.

325.5 Buildings. All structures must be stable and free from damage that could pose a hazard to people or property.

325.6 Membrane structures. All tents and membrane structures shall comply with Chapter 31.

325.6.1 Flame resistant material. All umbrellas or other fabric used for weather protection shall be of materials meeting the flame propagation performance of Test Method 2 of NFPA 701.

325.7 Attachments. No flags, banners, electrical wires or other items shall be connected from one mobile food vendor vehicles to another, or from a mobile food vendor vehicle to a permanent structure.

325.8 Electrical. Electrical wiring and equipment at mobile food vendor vehicle parks shall comply with Section 603.

325.8.1 Outdoor electrical. All electrical wiring and equipment used outdoors must be protected against the weather and outside elements.

325.9 Fire department access. All mobile food vendor vehicle parks shall be provided with Fire Department vehicle access in accordance with Section 503.

325.9.1 Obstructing fire department access. Mobile food vendor vehicles are strictly prohibited from setting up in or blocking any fire apparatus access roads.

325.10 Emergency plans. Mobile food vendor vehicle parks must maintain a Fire Safety and Evacuation Plan as set forth in Chapter 4.

325.10.1 Emergency plans binder. Mobile food vendor vehicle parks shall have a copy of the fire safety and evacuation plans for the fire code official to review as set forth in Chapter 4.

325.10.2 Muster point. Mobile food vendor vehicle parks shall have a muster point with a sign labeling the location.

325.11 Compliance with Other Harris County Regulations. Before any fire code permits are issued, the applicant must first obtain all required permits in accordance with Harris County regulations.

CHAPTER 4 - EMERGENCY PLANNING AND PREPAREDNESS

SECTION 403.1 IS AMENDED TO READ AS FOLLOWS:

403.1 General. In addition to the requirements of Section 401, occupancies, uses and outdoor locations shall comply with the emergency preparedness requirements set forth in Sections 403.2 through 403.11.3.3. Where a fire safety and evacuation plan are required by Sections 403.2 through 403.10.6, evacuation drills shall be in accordance with Section 405 and employee training shall be in accordance with Section 406.

SECTIONS 403.7.1 AND 403.7.2 ARE AMENDED TO READ AS FOLLOWS:

403.7.1 Group I-1 occupancies. Group I-1 occupancies shall comply with Sections 403.7.1.1 through 403.7.1.7.

403.7.1.1 Fire safety and evacuation plan. The fire safety and evacuation plan required by Section 404 shall include a description of special staff actions. Plans shall include all of the following in addition to the requirements of Section 404:

1. Procedures for full evacuation of care recipients.
2. In Group I-1, Condition 2, procedures for staged evacuation of care recipients through a refuge area in an adjacent *smoke compartment* and then to an exterior assembly point.
3. Shall be amended or revised upon admission of any resident care recipient with unusual needs.
4. For I-1 assisted living occupancies, shall include a section that outlines the processes and procedures for providing back up power within 3 hours of loss of electrical service to maintain all services outlined in section 1203.2.21 of this code.

403.7.2 Group I-2 occupancies. Group I-2 occupancies shall comply with Sections 403.7.2.1 through 403.7.2.4.

403.7.2.1 Fire safety and evacuation plan. The fire safety and evacuation plans required by Section 404 shall include a description of special staff actions. Plans shall include all of the following in addition to the requirements of Section 404:

1. Procedures for evacuation for care recipients with needs for containment or restraint and post-evacuation containment, where present.
2. A written plan for maintenance of the means of egress.
3. Procedure for a defend-in-place strategy.
4. Procedures for a full-floor or building evacuation, where necessary.
5. In Group I-2, Condition 2, amendments, or revisions upon admission of any care recipients with unusual needs.
6. For I-2 assisted living occupancies, shall include a section that outlines the processes and procedures for providing back up power within 3 hours of loss of electrical service to maintain all services outlined in section 1203.2.21 of this code.

SECTION 403.10.6 IS ADDED TO READ AS FOLLOWS:

403.10.6 Lithium-ion and lithium metal batteries. An approved fire safety and evacuation plan in accordance with Section 404 shall be prepared and maintained for occupancies that involve activities for the research and development, testing, manufacturing, handling or storage of lithium-ion batteries or lithium metal batteries, or the repair or servicing of vehicles powered by lithium-ion batteries or lithium metal batteries.

Exceptions: A fire safety and evacuation plan are not required for the storage or merchandizing of any of the following:

1. New or refurbished batteries installed for use in the equipment or vehicles they are designed to power.

2. New or refurbished batteries packed for use with the equipment or vehicles they are designed to power for merchandizing purposes.
3. New or refurbished lithium-ion batteries rated at not more than 300 watt-hours and lithium metal batteries containing not more than 25 grams of lithium metal in their original retail packaging.
4. The storage, repair and charging activities in detached one- and two-family dwellings and townhouses, provided that such devices are for personal use.
5. The storage, repair and charging activities associated with personal use in sleeping units and dwelling units of Group R-1 and R-2 occupancies.

403.10.6.1 Mitigation planning. The approved fire safety and evacuation plan shall include thermal runaway event mitigation measures. These measures shall include activities undertaken to prevent thermal runaway, early detection of a thermal runaway event, reporting of unplanned thermal runaway events to the fire official and mitigation measures to be undertaken to limit the size and impact of the event on occupants and the facility.

SECTION 403.11.3.1 IS AMENDED TO READ AS FOLLOWS:

403.11.3.1 Number of crowd managers. Not fewer than two trained crowd managers, and not fewer than one trained crowd manager for each 250 persons or portion thereof, shall be provided for the gathering.

Exceptions:

1. Outdoor events with fewer than 500 persons in attendance shall not require crowd managers.
2. Assembly occupancies used exclusively for religious worship with an occupant load not exceeding 1,000 shall not require crowd managers.
3. The number of crowd managers shall be reduced where, in the opinion of the fire code official, the fire protection provided by the facility and the nature of the event warrant a reduction.

SECTION 404.3 IS AMENDED AS FOLLOWS:

404.3 Maintenance. Fire safety, evacuation and lockdown plans shall be reviewed or updated annually or as necessitated by changes in staff assignments, occupancy, commodity storage or the physical arrangement of the building. Revised plans shall be submitted to the fire code official for review.

TABLE 405.3 IS AMENDED TO READ AS FOLLOWS:

**TABLE 405.3
FIRE AND EVACUATION DRILL FREQUENCY AND PARTICIPATION**

GROUP OR OCCUPANCY	FREQUENCY	PARTICIPATION
Group A	Quarterly	Staff
Group B ^b	Annually	All occupants
Group B ^c (Ambulatory care facilities)	Quarterly on each shift ^a	Staff
Group B ^b (clinic, outpatient)	Annually	Staff
Group E	Four per school year, two per semester	All occupants
Group F	Annually	Employees
Group I-1	Semiannually on each shift ^a	All occupants
Group I-2	Quarterly on each shift ^a	Staff
Group I-3	Quarterly on each shift ^a	Staff
Group I-4	Monthly on each shift ^a	All occupants
Group R-1	Quarterly on each shift	Employees

Group R-2 ^d	Four annually	All occupants
Group R-4	Semiannually on shift ^a	All occupants

- a. Emergency evacuation drills are required in Group B buildings having an occupant load of 500 or more persons or more than 100 persons above or below the lowest level of exit discharge.
- b. Emergency evacuation drills in Group R-2 college and university buildings shall be in accordance with Section 403.9.2.1. Other Group R-2 occupancies shall be in accordance with Section 403.9.2.2.

CHAPTER 5 - FIRE SERVICE FEATURES

SECTIONS 503.1.1, 503.2.1 AND 503.3 ARE AMENDED TO READ AS FOLLOWS:

503.1.1 Buildings and facilities. Approved fire apparatus access roads shall be provided for every facility, building or portion of a building hereafter constructed or moved into or within the jurisdiction. The fire apparatus access road shall comply with the requirements of this section and Appendix D, and shall extend to within 150 feet (45 720 mm) of all portions of the facility and all portions of the exterior walls of the first story of the building as measured by an approved route around the exterior of the building or facility.

Exceptions:

1. For other than Group H and I occupancies, buildings with high-piled combustible storage and high-rise buildings, the fire code official is authorized to increase the dimension of 150 feet (45 720 mm) up to 200 feet (60 960 mm) where any of the following conditions occur
 - 1.1 The building is equipped throughout with an approved automatic sprinkler system installed in accordance with Section 903.3.1.1, 903.3.1.2 or 903.3.1.3.
 - 1.2 When Fire apparatus access roads cannot be installed because of location on property, topography, waterways, nonnegotiable grades or other similar conditions, and an approved alternative means of fire protection is provided.
 - 1.3 There are not more than two Group R-3 or Group U occupancies.
2. Where approved by the fire code official, fire apparatus access roads shall be permitted to be exempted or modified for solar photovoltaic power generation facilities.

503.2.1 Dimensions. Fire apparatus access roads shall have an unobstructed width of not less than 20 feet (6096 mm), exclusive of shoulders, except for approved security gates in accordance with Section 503.6, and an unobstructed vertical clearance of not less than 13 feet 6 inches (4115 mm). See Appendix D for additional requirements.

503.3 Marking. Fire apparatus access roads shall be marked by painted lines with a minimum width of 6 inches to show the boundaries of the lane. The paint shall be red traffic paint. The words "NO PARKING FIRE LANE" or "FIRE LANE NO PARKING" shall appear in 4inch high white letters at intervals no greater than 25 feet on the red border markings along both sides of the fire lanes. Where a curb is available, the striping shall be on both the vertical and horizontal faces of the curb. Where signs are installed to identify fire lanes, signs shall comply with Section D103.6 in Appendix D.

SECTION 503.6.1 IS ADDED TO READ AS FOLLOWS:

503.6.1 Required hardware. Electrically operated vehicular gates shall comply with Section 3110 of the *International Building Code* and the following:

1. Electrically operated vehicular gates shall be equipped with a manual override or fail-safe system. Manual override and fail-safe systems shall be located on the same side and as near to the Emergency Access Activation Point (EAAP) as possible or may be included inside

or at the EAAP. Electronic or battery backup systems are acceptable for use for manual override or fail-safe systems. The manual override and fail-safe systems shall be subject to approval by the Fire Code Official.

2. The EAAP shall be located on the outside of the project and near the primary entrance either near the reader or gate access control box or on a post near the entrance gate. The EAAP shall not exceed a height of 5 feet. The EAAP shall provide an electric switch, toggle, micro-switch with button or key toggle electric switch. Key switch is preferred and is subject to approval by the Fire Code Official.
3. Gates shall have an approved key switch (preferred) or lock box and shall be located to provide immediate access from responding emergency vehicles.
4. Pedestal type keypads or card systems or curb type dividers shall not interfere with emergency vehicle access.

SECTION 505.1 IS AMENDED TO READ AS FOLLOWS:

505.1 Address identification. New and existing buildings shall be provided with approved address identification. The address identification shall be legible and placed in a position that is visible from the street or road fronting the property. Address identification characters shall be reflective and contrast with their background. Address numbers shall be Arabic numbers or alphabetical letters. Numbers shall not be spelled out. Each character shall be not less than 4 inches (102 mm) high with a minimum stroke width of ½ inch (12.7 mm). Where required by the fire code official, address identification shall be provided in additional approved locations to facilitate emergency response. Where access is by means of a private road and the building cannot be viewed from the public way, a monument, pole or other sign or means shall be used to identify the structure. Address identification shall be maintained.

SECTION 505.1.1 IS ADDED TO READ AS FOLLOWS:

505.1.1 Additional identification required. In multi-tenant buildings where exterior exit doors face directions other than front of building, each door shall be labeled with business name and suite number or address. Numbers and letters shall contrast with their background and be Arabic numbers or alphabetical block letters not less than 2½ inches in height with a minimum stroke width of ¼ inch.

SECTIONS 506.1 AND 506.1.1 ARE AMENDED TO READ AS FOLLOWS:

506.1 Where required. Where access to or within a structure or an area is restricted because of secured openings or where immediate access is necessary for life-saving or firefighting purposes, the fire code official is authorized to require a key box to be installed in an approved location. The key box shall be of an approved type listed in accordance with UL 1037 and shall contain keys to gain necessary access as required by the fire code official. Key boxes, key box systems, keys and padlocks shall be manufactured and supplied by the Knox® Company, with a key cut for unincorporated Harris County. and a list identifying a minimum of three representatives who would be available to come to the location in the event of an afterhours emergency. The representatives list shall have decision making authority for the business. The list shall be legible and provide mobile phone numbers for each representative. The list shall be maintained and kept current.

506.1.1 Locks. An approved lock shall be installed on gates, doors or similar barriers where required by the fire code official. Only key locks, key boxes and key box systems that utilize a Knox® Company key, with a key cut for unincorporated Harris County shall be utilized.

SECTION 506.1.2 ITEM 6 IS AMENDED TO READ AS FOLLOWS:

6. The key box shall be mounted within 20 feet of the main elevator bank at the lobby nearest to the lowest level of fire department access.

SECTION 506.1.3 IS ADDED TO READ AS FOLLOWS:

506.1.3 Gated communities and multi-unit housing. To assure reasonable access for fire-fighting vehicles and equipment, emergency medical services vehicles and law enforcement officers, the owner or the owners association of a gated community or multi-unit housing project shall comply with this section.

506.1.3.1 Vehicular gates. Each vehicular gate to a gated community or multi-unit housing project shall be provided with a key box within sight of the gate and in close proximity outside the gate, or the gate shall be secured with a chain and approved lock. The key box at all times must contain a key, card or code to open the gate, or a key switch or cable mechanism that overrides the key, card or code that normally opens the gate and allows the gate to be opened manually.

506.1.3.2 Pedestrian gates. Where pedestrian gates are installed, at least one pedestrian gate must have a key box within sight of the gate and in close proximity outside the gate. The key box at all times must contain a key, card, code, key switch or cable mechanism to open the gate. If there are multiple pedestrian gates present that utilize different keys, cards, or codes, the key box must contain:

1. One key, card, or code, properly labeled for each respective gate: or
2. A single master key, card, code, or a key switch or cable mechanism that will open all gates on the premises.

506.1.3.3 Electrical power gate. Where access gates are powered by electricity, the gate must be designed to open without the use of a key, card, code or key switch if the gate loses electrical power.

SECTION 506 – SECTIONS 506.3 AND 506.4 ARE ADDED TO READ AS FOLLOWS:

506.3 Approved markings. The door of Key boxes shall be painted bright red so as to be readily noticeable with wording "FIRE DEPT" in white permanent letters not less than 1 inch in height.

506.4 Key box access. Approved access shall be provided and maintained for all key boxes. Storage, trash and other materials or objects shall not be placed or kept in such a manner that would prevent such equipment from being readily accessible.

SECTION 509.2.1 IS ADDED TO READ AS FOLLOWS:

509.2.1 Locking and securing. All rooms, suites, buildings, or occupancies which contain fire protection equipment shall be provided with a lock box for fire department access. Only key boxes and key box

systems manufactured and supplied by the Knox® Company, with a key cut for unincorporated Harris County shall be utilized.

SECTION 510 IS AMENDED TO READ AS FOLLOWS:

510.1 Emergency responder communication coverage in new buildings. Approved in-building, two-way emergency responder communication coverage for emergency responders shall be provided in all new buildings. In-building, two-way emergency responder communication coverage within the building shall be based on the existing coverage levels of the public safety communication systems utilized by the jurisdiction, measured at the exterior of the building. This section shall not require improvement of the existing public safety communication systems. Frequencies will be determined by contacting Harris County Universal Services radio shop and the responding jurisdiction for the facility being tested. Coverage shall include the Harris County Radio System (TxWARN). The frequency range to be supported is 700-800 MHz (FDMA and TDMA). Additional VHF/UHF (150-174 MHz/408-512 MHz) frequency range may be required based upon the need of local public safety services or as otherwise required in writing by Harris County for public safety purposes.

Exceptions:

1. Where approved by the fire code official, a wired communication system in accordance with Section 907.2.13.2 shall be permitted to be installed or maintained instead of an approved radio coverage system.
2. Where it is determined by the fire code official that the radio coverage system is not needed.
3. In facilities where emergency responder radio coverage is required and such systems, components or equipment required could have a negative impact on the normal operations of that facility, the fire code official shall have the authority to accept an automatically activated emergency responder radio coverage system.
4. Buildings less than 50,000 square feet.
5. Single-family detached residential dwellings and multifamily buildings.
6. Buildings less than four stories in height with less than 50,000 square feet per floor and no occupied spaces below grade.

SECTION 510.3 IS AMENDED TO READ AS FOLLOWS:

510.3 Permit required. A permit for the installation of or modification to in-building, two-way emergency responder communication coverage systems and related equipment is required as specified in Section 105.6.4. Maintenance performed in accordance with this code is not considered a modification and does not require a permit. Application for permits must be submitted through Harris County engineering E-permits system and shall include:

1. Submittal Document: This document must include the material list, data sheets of the materials, snapshots of the overall design plan and floor plans.
2. Overall design plan, floor plans with the design, prediction propagation heat maps using PDF format with proper labeling for each component on a 24"X36" scale. Design plan shall also include projected emission limits to reduce the interference potential that would cause adverse effects of increased noise floor at the donor site.
3. Benchmark test is required for each floor to make sure the amount of coverage is needed (whole floor, partial floor or none needed). The results of this test must include the make/model and calibration certificate of the measurement device used.

SECTION 510.4.2.2 IS AMENDED TO READ AS FOLLOWS:

510.4.2.2 Technical criteria. The fire code official in correlation with Harris County Universal services shall maintain a document providing the specific technical information and requirements for the in-building, two-way emergency responder communication coverage system. This document shall contain, but not be limited to, the various frequencies required, the location of radio sites, the effective radiated power of radio sites, the maximum propagation delay in microseconds, the applications being used and other supporting technical information necessary for system design.

SECTION 510.4.2.7 IS AMENDED TO READ AS FOLLOWS:

510.4.2.7 Design documents. The fire code official shall have the authority to require “as-built” design documents and specifications for in-building, two-way emergency responder communication coverage systems. The documents shall be in PDF format and included with the application for permit.

CHAPTER 6 - BUILDING SERVICES AND SYSTEMS

SECTION 611 IS ADDED TO READ AS FOLLOWS:

**SECTION 611
ELECTRIC VEHICLE CHARGING STATIONS**

611.1 General. Electrical vehicle charging stations shall comply with this section.

611.1.1 Location of charging stations. Battery electric vehicle charging stations as follows:

1. Ten feet or more from the lot line of the property.
2. Twenty feet from a required exit discharge of a structure.
3. So that all portions of the vehicle being charged will be on the premises of the battery electric vehicle charging station.
4. Not within a parking garage unless on the first floor.

611.2 Emergency Disconnects/Shutoff Switches. Locations containing electric vehicle charging stations shall be provided with a clearly identified emergency disconnect/estops, provided with ready access and installed in an approved location. The emergency power disconnect/shutoff switch shall shut off all power from the charging station when activated.

611.2.1 Alternative disconnects. Where approved, a disconnect provided to comply with NFPA 70 can be utilized to meet the disconnect requirement when it is clearly identified, and the location is provided with ready access.

611.2.2 Location. Emergency disconnect/shutoff switches shall be installed not more than 100 feet and not less than 20 feet from the charging stations.

611.2.3 Height. Emergency disconnect/shutoff switches shall be not less than 42 inches (1067 mm) and not more than 48 inches (1372 mm) measured vertically above the walking surface.

611.2.4 Labeling. Emergency disconnect switches shall be clearly visible and labeled to correspond to the associated charging station. The emergency disconnect/shutoff shall be labeled “EMERGENCY ELECTRIC VEHICLE CHARGER DISCONNECT” in letters not less than 4 inches high.

611.2.5 Manual reset. Emergency disconnect/shutoff switches shall require manual intervention to reset after activation.

611.3 Fire extinguishers. Approved portable fire extinguishers complying with Section 906 with a minimum rating of 2-A:20-B:C shall be provided and located such that an extinguisher is not more than 75 feet (23 860 mm) from electric vehicle charging stations.

CHAPTER 7 - FIRE AND SMOKE PROTECTION FEATURES

SECTION 705.2.6 IS AMENDED TO READ AS FOLLOWS:

705.2.6 Testing. Horizontal and vertical sliding and rolling fire doors shall be inspected and tested annually by a trained technician in accordance with NFPA 80 to confirm proper operation and full closure. Records of inspections and testing shall be maintained.

CHAPTER 9 - FIRE PROTECTION AND LIFE SAFETY

SECTION 901.4.7 IS AMENDED TO READ AS FOLLOWS:

901.4.67 Pump and riser room size. Fire pump rooms and automatic sprinkler system riser rooms shall be designed with adequate space for all equipment necessary for the installation, as defined by the manufacturer, with sufficient working space around the stationary equipment. Clearances around equipment to elements of permanent construction, including other installed equipment and appliances, shall be sufficient to allow inspection, service, repair or replacement without removing such elements of permanent construction or disabling the function of a required fire-resistance-rated assembly. Fire pump and automatic sprinkler system riser rooms shall be provided with doors and unobstructed passageways large enough to allow removal of the largest piece of equipment. Sufficient clearances around equipment and permanent construction shall be maintained and kept free of storage and other obstructions.

901.4.67.1 Access. Automatic sprinkler system risers, fire pumps and controllers shall be located in an automatic sprinkler riser room or a fire pump room readily accessible. Fire sprinkler riser rooms shall have an exterior access door with a key box in accordance with Section ~~506~~ 509.2.1. The door shall be permitted to be locked provided that the key is available at all times.

Exceptions: Automatic fire sprinkler control valves that are located on the exterior of the building, or in a vault, or in a readily accessible area outside of the building.

901.4.67.2 Marking on access doors. Access doors for automatic sprinkler system riser rooms and fire pump rooms shall be labeled with an approved sign. The lettering shall be reflective and in contrasting color to the background. Letters shall have a minimum height of 2 inches (51 mm) with a minimum stroke of 3/8 inch (10 mm).

901.4.67.3 Environment. Automatic sprinkler system riser rooms and fire pump rooms shall be maintained at a temperature of not less than 40°F (4°C) and other environmental requirements as specified by the manufacturer of the installed equipment. Heating units shall be permanently installed.

901.4.67.4 Lighting. Permanently installed artificial illumination on both interior and exterior sides of the access door shall be provided in the automatic sprinkler system riser rooms and fire pump rooms.

901.4.67.5 Fire sprinkler riser room separation. Automatic fire sprinkler riser rooms shall be separated from the remainder of the building by 1-hour fire barriers or 1-hour horizontal assemblies.

TABLE 901.6.1 IS AMENDED TO READ AS FOLLOWS:

**TABLE 901.6.1
FIRE PROTECTION SYSTEM MAINTENANCE STANDARDS**

SYSTEM	STANDARD
Portable fire extinguishers	NFPA 10
Carbon dioxide fire-extinguishing system	NFPA 12
Halon 1301 fire-extinguishing system	NFPA 12A
Dry-chemical extinguishing systems	NFPA 17
Wet-chemical extinguishing systems	NFPA 17A
Water-based fire protection systems	NFPA 25
Fire alarm systems	NFPA 72
Mechanical smoke exhaust systems	NFPA 204
Smoke and heat vents	NFPA 204
Water-mist systems	NFPA 750
Clean agent extinguishing systems	NFPA 2001
Aerosol fire extinguishing systems	NFPA 2010

SECTION 903.2.2 IS AMENDED TO READ AS FOLLOWS:

903.2.2 Group B. An automatic sprinkler system shall be provided for Group B occupancies as required in Sections 903.2.2.1 and 903.2.2.2.

903.2.2.1 Ambulatory care facilities. An automatic sprinkler system shall be installed throughout the entire floor containing an ambulatory care facility where either of the following conditions exist at any time:

1. Four or more care recipients are incapable of self-preservation.
2. One or more care recipients that are incapable of self-preservation are located at other than the level of exit discharge serving such a facility.

In buildings where ambulatory care is provided on levels other than the level of exit discharge, an automatic sprinkler system shall be installed throughout the entire floor as well as all floors below where such care is provided, and all floors between the level of ambulatory care and the nearest level of exit discharge, the level of exit discharge, and all floors below the level of exit discharge.

Exception: Floors classified as an open parking garage are not required to be sprinklered.

903.2.2.2 Lithium-ion or lithium metal battery research and development. An automatic sprinkler system shall be installed throughout fire areas utilized for the research and development or testing of lithium-ion or lithium metal batteries.

SECTION 903.2.4 IS AMENDED TO READ AS FOLLOWS:

903.2.4 Group F-1. An automatic sprinkler system shall be provided throughout all buildings containing a Group F-1 occupancy where one of the following conditions exists:

1. A Group F-1 fire area exceeds 12,000 square feet (1115 m²).
2. A Group F-1 fire area is located more than three stories above grade plane.
3. The combined area of all Group F-1 fire areas on all floors, including any mezzanines, exceeds 24,000 square feet (2230 m²).
4. A Group F-1 occupancy is used to manufacture or recycle lithium-ion or lithium metal batteries.

5. A Group F-1 occupancy is used to manufacture vehicles, energy storage systems or equipment containing lithium-ion or lithium metal batteries where the batteries are installed as part of the manufacturing process.

SECTION 903.2.4.4 IS ADDED TO READ AS FOLLOWS:

903.2.4.4 Combustible waste sorting and transfer. An automatic sprinkler system shall be provided throughout F-1 occupancy fire areas that contain combustible waste sorting and transfer operations in excess of 5,000 square feet (464.5 m²) in area.

SECTION 903.2.7.3 IS ADDED TO READ AS FOLLOWS:

903.2.7.3 Lithium-ion or lithium metal battery storage. An automatic sprinkler system shall be provided in a room or space within a Group M occupancy where required for the storage of lithium-ion or lithium metal batteries by Section 322 or Chapter 32.

SECTIONS 903.2.9 AND 903.2.9.1 ARE AMENDED BY ADDING ITEM 5 TO READ AS FOLLOWS:

903.2.9 Group S-1.

5. A Group S-1 fire area used for the storage of lithium-ion or lithium metal powered vehicles where the fire area exceeds 500 square feet (46.4 m²).

902.2.9.1 Repair garages.

2. A Group S-1 fire area used for the storage of lithium-ion or lithium metal powered vehicles where the fire area exceeds 500 square feet (46.4 m²).

SECTIONS 903.2.9.4 IS AMENDED TO READ AS FOLLOWS:

903.2.9.4 Group S-1 upholstered furniture and mattresses. An automatic sprinkler system shall be provided throughout a Group S-1 fire area where the area used for the storage of upholstered furniture or mattresses exceeds 2,500 square feet (232 m²).

Exception: Self-service storage facilities complying with Section 903.2.9.5.

SECTIONS 903.2.9.5 IS ADDED TO READ AS FOLLOWS:

903.2.9.5 Self-service storage facilities. An automatic sprinkler system shall be provided throughout buildings used for self-service storage facilities.

Exception: Self-service storage facilities with fire areas not greater than 12,000 square feet and not greater than one story above grade plane where all storage spaces can be accessed directly from the exterior.

SECTIONS 903.2.10.3 IS ADDED TO READ AS FOLLOWS:

903.2.10.3 Lithium-ion or lithium metal powered vehicles. An approved automatic sprinkler system shall be provided throughout fire areas used for the parking or storage of lithium-ion or lithium metal powered vehicles where the fire area exceeds 500 square feet (46.4 m²).

TABLE 903.2.11.6 IS AMENDED BY ADDING A NEW ROW TO READ AS FOLLOWS:

**TABLE 903.2.11.6
ADDITIONAL REQUIRED FIRE PROTECTION SYSTEMS**

SECTION	SUBJECT
324.2.1	Lithium-ion and lithium metal battery charging locations

SECTIONS 903.3.1.1.1 IS AMENDED TO READ AS FOLLOWS:

903.3.1.1.1 Exempt locations. Where approved by the fire code official, automatic sprinklers may be omitted in the following rooms or areas where such rooms or areas are protected with an approved automatic fire detection system in accordance with Section 907.2 that will respond to visible or invisible particles of combustion. Sprinklers shall not be omitted from a room merely because it is damp, fire-resistance-rated construction or contains electrical equipment.

SECTIONS 903.3.1.1.3, 903.3.1.1.4 AND 903.3.1.1.5 ARE ADDED TO READ AS FOLLOWS:

903.3.1.1.3 Main protection. Fire sprinkler mains and cross mains installed in unsprinklered areas shall be protected from mechanical and fire damage with fire sprinklers or by enclosing in a 1-hour rated chase.

903.3.1.1.4 Lithium-ion or lithium metal batteries. Where automatic sprinkler systems are required by the sections listed in Table 903.3.1.1.4, for areas containing lithium-ion or lithium metal batteries, the design of the system shall be based on a series of fire tests. Such tests shall be conducted or witnessed and reported by an approved testing laboratory involving test scenarios. A report prepared by a registered design professional with expertise in fire protection engineering shall be provided to the fire code official for review and approval in accordance with Section 104.8.2 and shall that address the range of variables associated with the intended arrangement of the hazards to be protected.

**TABLE 903.3.1.1.4
AUTOMATIC SPRINKLER SYSTEMS FOR LITHIUM-ION AND LITHIUM METAL BATTERY AREAS**

SECTION/TABLE	AREA REQUIRED
Table 3206.2	High-hazard commodity
Section 322	Battery storage
Section 903.2.2	Research and development laboratory
Section 903.2.4	Manufacturing
Section 903.2.7.3	Group M occupancy
Section 1207.6	Energy storage systems

903.3.1.1.5 Required minimum safety pressure. A safety factor of 5 psi minimum shall be provided for hydraulically calculated fire sprinkler pressure demands.

SECTION 903.3.1.2.4 IS ADDED TO READ AS FOLLOWS:

903.3.1.2.4 Required minimum safety pressure. A safety factor of 5 psi minimum shall be provided for hydraulically calculated fire sprinkler pressure demands.

SECTIONS 903.4.1 AND 903.4.2 ARE AMENDED TO READ AS FOLLOWS:

903.4.1 Monitoring. Alarms, supervisory and trouble signals shall be transmitted to an approved supervising station, through a dedicated function fire alarm control unit or a fire alarm control panel. Each alarm, supervisory and trouble signal shall be addressable and identify the building, zone or riser location when initiated or activated. When approved by the Fire Code Official, a performance-based alternative may be approved.

Exceptions:

3. Underground key or hub valves in roadway boxes provided by the municipality or public utility is not required to be monitored.
4. Backflow prevention device test valves located in limited area sprinkler system supply piping shall be locked in the open position.

In occupancies required to be equipped with a fire alarm system, the backflow preventer valves shall be electrically supervised by a tamper switch installed in accordance with NFPA 72 and separately annunciated.

903.4.2 Alarms. An approved audible device, located on the exterior of the building in an approved location, shall be connected to each automatic sprinkler system. Such sprinkler waterflow alarm devices shall be activated by water flow equivalent to the flow of a single sprinkler of the smallest orifice size installed in the system. Where a fire alarm system is installed, actuation of the automatic sprinkler system shall actuate the building fire alarm system. Where a fire alarm system is not installed, occupant notification in accordance with Section 903.4.2.1 shall be provided and activated upon water flow.

903.4.2.1. Occupancy notification. Occupant notification shall be provided in accordance with Section 907.5 in all areas protected by the automatic sprinkler system.

Exception: Group S Warehouse areas with no public access.

SECTION 904.13.1 IS AMENDED TO READ AS FOLLOWS:

904.13.1 Manual system operation. A manual actuation device shall be located at or near a means of egress from the cooking area not less than 10 feet (3048 mm) and not more than 20 feet (6096 mm) from the kitchen exhaust system. The manual actuation device shall be installed not more than 48 inches (1200 mm) nor less than 42 inches (1067 mm) above the floor and shall clearly identify the hazard protected. The manual actuation shall require a maximum force of 40 pounds (178 N) and a maximum movement of 14 inches (356 mm) to actuate the fire suppression system. An unobstructed path of not less than 36 inches (915 mm) wide to the manual actuation device shall be maintained.

Exception: Automatic sprinkler systems shall not be required to be equipped with manual actuation means.

SECTION 904.14.1.1 IS AMENDED TO READ AS FOLLOWS:

904.14.1.1 Automatic fire-extinguishing system. The domestic recirculating or exterior vented cooking hood provided over the cooktop or range shall be equipped with an approved automatic fire-extinguishing system complying with the following:

1. The automatic fire-extinguishing system shall be of a type recognized for protection of domestic cooking equipment. Pre-engineered automatic fire-extinguishing systems shall be

- listed and labeled in accordance with UL 300A and installed in accordance with the manufacturer's instructions.
2. Manual actuation of the fire-extinguishing system shall be provided in accordance with Section 904.13.1.
 3. Interconnection of the fuel and electric power supply shall be in accordance with Section 904.13.2.
 4. Where a facility is equipped with a fire alarm system, the automatic fire-extinguishing system shall be monitored by the fire alarm system.
 5. Where a facility is not equipped with a fire alarm system, the fire-extinguishing system shall have audible and visual notification provided in a conspicuous area within the facility to notify occupants of the activation of the fire-extinguishing system.

SECTIONS 907.2, 907.2.1 ARE AMENDED TO READ AS FOLLOWS:

907.2 Where required—new buildings and structures. An approved fire alarm system installed in accordance with the provisions of this code and NFPA 72 shall be provided in new buildings and structures in accordance with Sections 907.2.1 through 907.2.24 and provide occupant notification in accordance with Section 907.5, unless other requirements are provided by another section of this code. Fire alarm will include a minimum of 50 addressable points.

Only one fire alarm system shall be installed per building. Multiple points of silence and reset are prohibited on a single fire alarm system, except for the fire alarm control unit and the annunciator panel required in Section 907.5.1.

Exceptions:

1. Where approved by the fire code official, portions of a building separated by fire walls without openings and identified with separate legitimate addresses shall be considered separate buildings.
2. Where protected by an automatic sprinkler system, each portion of the building so considered shall be protected by a separate independent sprinkler system or a portion of a single sprinkler system dedicated to the separated portion of the building with dedicated fire sprinkler monitoring.

Not fewer than one manual fire alarm box shall be provided in an approved location to initiate a fire alarm signal for fire alarm systems employing automatic fire detectors or waterflow detection devices. Where other sections of this code allow elimination of fire alarm boxes due to sprinklers, a single fire alarm box shall be installed.

Exceptions:

1. The manual fire alarm box is not required for fire alarm systems dedicated to elevator recall control and supervisory service.
2. The manual fire alarm box is not required for Group R-2 occupancies unless required by the fire code official to provide a means for fire watch personnel to initiate an alarm during a sprinkler system impairment event. Where provided, the manual fire alarm box shall not be located in an area that is open to the public.

907.2.1 Group A. A manual fire alarm system that activates the occupant notification system in accordance with Section 907.5 shall be installed in Group A occupancies where the occupant load due to the assembly occupancy is 100. Where multiple Group A occupancies are located within a building, the aggregate occupant load of the Group A occupancies shall be considered unless they are separated from one another in accordance with Section 707.3.10 of the International Building Code.

Portions of Group E occupancies occupied for assembly purposes shall be provided with a fire alarm system as required for the Group E occupancy.

Exception: Manual fire alarm boxes are not required where the building is equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 and the occupant notification appliances will activate throughout the notification zones upon sprinkler water flow.

SECTION 907.2.1.3 IS ADDED TO READ AS FOLLOWS:

907.2.1.3 – Group A-2. A manual fire alarm system that activates the occupant notification system in accordance with Section 907.5 shall be installed in Group A-2 occupancies where alcohol is consumed.

SECTIONS 907.2.3.1 AND 907.2.3.2 IS ADDED TO READ AS FOLLOWS:

907.2.3.1 Pre-K areas in Group E occupancies. Smoke detection shall be provided throughout areas or rooms that can be occupied by Pre-K children.

907.2.3.2 Temporary Education Occupancies. All temporary educational occupancies not equipped with a sprinkler system shall provide smoke detection throughout the occupiable space. Any initiation and notification devices installed in these occupancies shall be connected to the campus fire alarm system.

THE FIRST PARAGRAPH OF SECTION 907.2.6 IS AMENDED TO READ AS FOLLOWS:

907.2.6 Group I. A manual fire alarm system that activates the occupant notification system in accordance with Section 907.5 shall be installed in Group I occupancies. An automatic smoke detection system that activates the occupant notification system in accordance with Section 907.5 shall be provided in accordance with Sections 907.2.6.1 through 907.2.6.4 and 907.4.3.1.

SECTION 907.2.6.4 IS ADDED TO READ AS FOLLOWS:

907.2.6.4 Group I-4 occupancies. A manual fire alarm system that initiates the occupant notification signal utilizing an emergency voice/alarm communication system meeting the requirements of Section 907.5.2.2 and installed in accordance with Section 907.6 shall be installed in Group I-4 licensed daycare centers. Where automatic sprinkler systems are installed, such systems shall be connected to the building fire alarm system. Smoke detection shall be provided in areas or rooms that can be occupied by children, and where required in Section 907.4.3.1.

Exceptions: In Group I-4 occupancies an emergency voice/alarm communication system is not required when the facility occupancy load is 100 or less.

SECTION 907.2.23 IS AMENDED TO READ AS FOLLOWS:

907.2.23 Energy storage systems. An automatic smoke detection system, thermal imaging detection system or radiant-energy detection system shall be installed in rooms, areas and walk-in units containing energy storage systems as required in Section 1207.

SECTIONS 907.2.24 IS ADDED TO READ AS FOLLOWS:

907.2.24 Combustible waste sorting and transfer. A radiant-energy fire detection system or a thermal imaging fire detection system shall be provided throughout Group F-1 fire areas that contain combustible waste sorting and transfer operations in excess of 5,000 square feet (464.5 m²) in area.

SECTION 907.4.1 IS AMENDED TO READ AS FOLLOWS:

907.4.1 Protection of fire alarm control unit. A single smoke detector shall be provided at the location of each fire alarm control unit, notification appliance circuit power extenders and supervising station transmitting equipment.

Exception: Where ambient conditions prohibit installation of a smoke detector, a heat detector shall be permitted.

SECTION 907.4.3.1 IS ADDED TO READ AS FOLLOWS:

907.4.3.1 Required smoke detection. All required fire alarm systems shall also include smoke detectors in each mechanical equipment, electrical, transformer, telephone equipment, corridors, lobbies, storage rooms larger than 200 square feet, elevator machine rooms, elevator lobbies and other areas determined to be a special hazard by the Fire Code Official.

SECTION 907.5.1 IS AMENDED TO READ AS FOLLOWS:

907.5.1 Alarm activation and annunciation. Upon activation, fire alarm systems shall initiate occupant notification and shall annunciate at the fire alarm control unit, or where allowed elsewhere by Section 907, at a constantly attended location. Annunciation shall also be provided at the main entrance to the building.

SECTIONS 907.5.2.2 AND 907.5.2.2.2 ARE AMENDED TO READ AS FOLLOWS:

907.5.2.2 Emergency voice/alarm communication systems. Emergency voice/alarm communication systems required by this code shall be designed and installed in accordance with NFPA 72. The operation of any automatic fire detector, sprinkler waterflow device or manual fire alarm box shall automatically sound an alert tone followed by voice instructions giving approved information and directions for a general or staged evacuation in accordance with the building's fire safety and evacuation plans required by Section 404. The voice instructions shall continue until the fire alarm system is silenced or reset, annunciating between alert tones. In high-rise buildings, the system shall operate on at least the alarming floor, the floor above and the floor below. Speakers shall be provided throughout the building by paging zones. At a minimum, paging zones shall be provided as follows:

1. Elevator groups.
2. Interior exit stairways.

3. Each floor.
4. Areas of refuge as defined in Chapter 2.

Exception: In Group I-1 and I-2 occupancies, the alarm shall sound in a constantly attended area and a general occupant notification shall be broadcast over the overhead page.

907.5.2.2.2 Live voice messages. The emergency voice/alarm communication system shall have the capability to broadcast live voice messages by paging zones on a selective and all-call basis. Emergency voice/alarm communication systems shall be programmed to return to the pre-recorded messaging or alarm signaling immediately following live voice messaging for continued occupant notification.

SECTION 907.6.2.1 IS ADDED TO READ AS FOLLOWS:

907.6.2.1 Fire Alarm surge protectors. Fire alarm related components shall be equipped with surge protection, installed in accordance with manufacturer specifications. These components include but are not limited to signaling line circuits (SLC), notification appliance circuits (NAC), telephone lines, and AC power connections.

SECTIONS 907.6.6 IS AMENDED TO READ AS FOLLOWS:

907.6.6 Monitoring. Alarms, supervisory and trouble signals shall be transmitted to an approved supervising station. Each alarm, supervisory and trouble signal shall identify the building, room and location of the specific device that was initiated or activated. When approved by the Fire Code Official, a performance-based alternative may be approved.

Exception: Monitoring by a supervising station is not required for:

1. Single- and multiple-station smoke alarms required by Section 907.2.11.
2. Smoke detectors in Group I-3 occupancies.
3. Automatic sprinkler systems in one- and two-family dwellings.

SECTIONS 907.8.4.1 IS ADDED TO READ AS FOLLOWS:

907.8.4.1 Fire alarm control unit replacement. Where maintenance of an existing fire alarm system involves replacement or upgrade of the fire alarm control unit and requires a new installation tag and certification, the entire fire alarm system shall be considered a new system and meet the requirements of Section 907.2.

SECTION 912.6 IS AMENDED TO READ AS FOLLOWS:

912.6 Backflow protection. The potable water supply to automatic sprinkler and standpipe systems shall be protected against backflow as required by the Local Water Authority.

SECTIONS 913.2.1.1, 913.6, 913.7 AND 913.8 ARE ADDED TO READ AS FOLLOWS:

913.2.1.1 Fire pump rooms. Fire pump rooms shall have an exterior access door with a Key Box system compliant with 506.1 for fire department access. Illumination shall be provided on both the exterior and interior sides of the access door and the door shall be clearly marked and identified per Section 509.2.1. Storage rooms shall not be used for a fire pump room.

913.6 Water supply for fire pumps. Where a fire protection system is connected to a municipal type of water system or utility district water line, the water authority having jurisdiction shall determine the required backflow prevention necessary to protect their water lines. Equipment and devices installed to guard against possible contamination of the water system shall comply with the manufacturer's specifications and national standards.

913.7 Electrical outage history report. Where an electric-driven fire pump is proposed, an electric service outage report shall be provided. The report shall come from the local utility provider and include a list of all electrical outages for a period of the past 24 months for the permitted address.

913.8 Standby power supply for fire pumps. Standby power supply is required for electric-driven fire pump installations in buildings classified as Critical Facilities, and when required by the Fire Code Official after consideration of the occupancy classification. Such standby power supplies shall meet the requirements of Section 1203.2.20.

SECTION 914.7.1 IS AMENDED TO READ AS FOLLOWS:

914.7.1 Automatic sprinkler system. Buildings containing special amusement areas shall be equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1. Where the special amusement area is temporary, the sprinkler water supply shall be of an approved temporary means.

Exceptions:

1. Automatic sprinklers are not required where the total floor area of a temporary special amusement building is less than 1,000 square feet (93 m²) and the exit access travel distance from any point to an exit is less than 50 feet (15 240 mm).
2. Temporary special amusement areas constructed in accordance with Chapter 31 may seek approval of a performance-based alternative under Section 104.10.

CHAPTER 11 - CONSTRUCTION REQUIREMENTS FOR EXISTING BUILDINGS

SECTION 1101.2.1 IS ADDED TO READ AS FOLLOWS:

1101.2.1 Applicability. All existing buildings, structures, facilities, or occupancies are subject to review and permitting under this chapter if:

1. The previous business or occupancy was issued a development permit after the original adoption of the Harris County Fire Code, January 1, 2005, received a certificate of compliance, and was closed, vacant, or not utilized for the intended purpose for more than 30 days, regardless of if any construction is required to operate.
2. The business or occupancy has no record of being issued a development permit or a certificate of compliance regardless of if any construction is required to operate.
3. If any construction takes place beyond maintenance of interior finishes such as painting walls, replacing floor coverings, etc. Any building of new walls, enclosing openings, changing the floor plan, etc. constitutes construction.

Existing occupancies that do not meet the definition of substantial improvement and have been permitted after the adoption of the Harris County Fire Code, January 1, 2005, and issued a

Certificate of Compliance that has not closed or vacated for more than 30 days shall not be subjected to review under this chapter. The fire code official has the authority to require compliance with this chapter on any existing building or structure in the interest of fire and life safety for the protection of the occupants of said building or structure.

SECTION 1103.5.1 IS AMENDED TO READ AS FOLLOWS:

1103.5.1 Group A-2. Where alcoholic beverages are consumed in a Group A-2 occupancy having an occupant load of 300 or more, the fire area containing the Group A-2 occupancy shall be equipped with an automatic sprinkler system in accordance with Section 903.3.1.1 and occupancy notification in accordance with Section 903.4.2.1.

SECTION 1103.7 IS AMENDED TO READ AS FOLLOWS:

1103.7 Fire alarm systems. An approved fire alarm system shall be installed in existing buildings and structures in accordance with Sections 1103.7.1 through 1103.7.7 and provide occupant notification in accordance with Section 907.5 unless other requirements are provided by other sections of this code.

Exception: Occupancies with an existing, previously approved fire alarm system.

1103.7.1 Group A-1 & A-2. A manual fire alarm system shall be installed in existing Group A-1 & A-2 Occupancies where the occupancy load is 300 or greater or where alcohol is being consumed in accordance with Section 907.2.1.

1103.7.2 Group E. A fire alarm system shall be installed in existing Group E occupancies in accordance with Section 907.2.3.

Exceptions:

1. A manual fire alarm system is not required in a building with a maximum area of 1,000 square feet (93 m²) that contains a single classroom and is located not closer than 50 feet (15 240 mm) from another building.
2. A manual fire alarm system is not required in Group E occupancies with an occupant load less than 50.

1103.7.3 Group I-1. An automatic fire alarm system shall be installed in existing Group I-1 facilities in accordance with Section 907.2.6.1.

Exception: Where each sleeping room has a means of egress door opening directly to an exterior egress balcony that leads directly to the exits in accordance with Section 1021, and the building is not more than three stories in height.

1103.7.4 Group I-2. In Group I-2, an automatic fire alarm system shall be installed in accordance with Section 1105.10.

1103.7.5 Group I-3. An automatic and manual fire alarm system shall be installed in existing Group I-3 occupancies in accordance with Section 907.2.6.3.

1103.7.6 Group R-1. A fire alarm system and smoke alarms shall be installed in existing Group R-1 occupancies in accordance with Sections 1103.7.6.1 through 1103.7.6.2.1.

1103.7.6.1 Group R-1 hotel and motel manual fire alarm system. A manual fire alarm system that activates the occupant notification system in accordance with Section 907.5 shall be installed in existing Group R-1 hotels and motels more than one story in height or with more than 20 sleeping units.

Exceptions:

1. Buildings less than two stories in height where all sleeping units, attics and crawl spaces are separated by 1-hour fire-resistance-rated construction and each sleeping unit has direct access to a public way, egress court or yard.
2. A manual fire alarm system is not required in buildings not more than three stories in height with not more than 20 sleeping units and equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2.
3. Manual fire alarm boxes are not required throughout the building where the following conditions are met:
 - 3.1 The building is equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2.
 - 3.2 The notification appliances will activate upon sprinkler water flow.
 - 3.3 Not less than one manual fire alarm box is installed at an approved location.
4. Existing fire alarm systems that are compliant with the State Fire Marshal's Office rules and regulations and are not part of a substantial improvement repair or replacement.

1103.7.6.1.1 Group R-1 hotel and motel automatic smoke detection system. An automatic smoke detection system that activates the occupant notification system in accordance with Section 907.5 shall be installed in existing Group R-1 hotels and motels throughout all interior corridors serving sleeping rooms not equipped with an approved, supervised sprinkler system installed in accordance with Section 903.

Exception: An automatic smoke detection system is not required in buildings that do not have interior corridors serving sleeping units and where each sleeping unit has a means of egress door opening directly to an exit or to an exterior exit access that leads directly to an exit.

1103.7.6.2 Group R-1 boarding and rooming houses manual fire alarm system. A manual fire alarm system that activates the occupant notification system in accordance with Section 907.5 shall be installed in existing Group R-1 boarding and rooming houses.

Exception: Buildings less than two stories in height where all sleeping units, attics and crawl spaces are separated by 1-hour fire-resistance-rated construction and each sleeping unit has direct access to a public way, egress court or yard.

1103.7.6.2.1 Group R-1 boarding and rooming houses automatic smoke detection system. An automatic smoke detection system that activates the occupant notification system in accordance with Section 907.5 shall be installed in existing Group R-1 boarding and rooming houses throughout all interior corridors serving sleeping units not equipped with an approved, supervised sprinkler system installed in accordance with Section 903.

Exception: Buildings equipped with single-station smoke alarms meeting or exceeding the requirements of Section 907.2.11.1 and where the fire alarm system includes not less than one manual fire alarm box per floor arranged to initiate the alarm.

1103.7.7 Group R-2. A manual fire alarm system that activates the occupant notification system in accordance with Section 907.5 shall be installed in existing Group R-2 occupancies more than three stories in height or with more than 16 dwelling or sleeping units.

Exceptions:

1. Where each living unit is separated from other contiguous living units by fire barriers having a fire-resistance-rating of not less than $\frac{3}{4}$ hour, and where each living unit has either its own independent exit or its own independent stairway or ramp discharge at grade.

2. A separate fire alarm system is not required in buildings that are equipped throughout with an approved supervised automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2 and having local alarm to notify all occupants.
3. A fire alarm system is not required in buildings that do not have interior corridors serving dwelling units and are protected by an approved automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2, provided that dwelling units either have a means of egress door opening directly to an exterior exit access that leads directly to the exits or are served by open-ended corridors designed in accordance with Section 1027.6, Exception 3.
4. A fire alarm system is not required in buildings that do not have interior corridors serving dwellings units, do not exceed three stories in height and comply with both of the following:
 - 4.1 Each dwelling unit is separated from other contiguous dwelling units by fire barriers having a fire-resistance rating of not less than ¾ hour.
 - 4.2 Each dwelling unit is provided with hard wired, interconnected smoke alarms as required for new construction in Section 907.2.11.
5. Existing fire alarm systems that are compliant with the State of Texas rules and regulations and are not part of a substantial improvement repair or replacement.

SECTION 1103.11 IS ADDED TO READ AS FOLLOWS:

1103.11 Secondary power for Group I-1 and I-2. Existing Group I-1 assisted living facilities and Group I-2 nursing homes shall be provided with the ability to provide secondary power as required in Section 1203.2.21. The facility shall comply with Section 1203.2.21 prior to any of the following:

1. The final inspection for an alteration, remodel or addition to the facility for which the construction cost exceeds 50 percent of the building's value according to the certified tax appraisal roll for the county for the preceding year.
2. The approval of a Change of Occupancy or Change of Use for the facility.
3. January 1, 2026. (if extended past this date-facilities will require an addition of a shoreline connection point for emergency generator hook up prior to 1 January 2026)

CHAPTER 12 - ENERGY SYSTEMS

SECTION 1201.1 IS AMENDED TO READ AS FOLLOWS:

1201.1 Scope. The provisions of this chapter shall apply to the installation, operation, maintenance, repair, retrofitting, testing, commissioning, and decommissioning of energy systems used for generating or storing energy, including but not limited to energy storage systems under the exclusive control of an electric utility or lawfully designated agency. It shall not apply to equipment associated with the generation, control, transformation, transmission, or distribution of energy installations that is under the exclusive control of an electric utility or lawfully designated agency. Energy storage systems regulated by Section 1207 shall comply with this chapter, as appropriate, and NFPA 855.

SECTION 1203.1.8 IS AMENDED TO READ AS FOLLOWS:

1203.1.8 Group I-2 occupancies. In Group I-2 occupancies located in flood hazard areas per the Regulations of Harris County, Texas for Floodplain Management, where new essential electrical

systems are installed, and where new or replacement essential electrical system generators are installed, the system and generator shall be located and installed in accordance with the Regulations of Harris County, Texas for Floodplain Management.

SECTION 1203.2 IS AMENDED TO READ AS FOLLOWS:

1203.2 Where required. Emergency and standby power systems shall be provided where required by Sections 1203.2.1 through 1203.2.20.

SECTION 1203.2.20 IS ADDED TO READ AS FOLLOWS:

1203.2.20 Critical facilities. Critical facilities shall be provided with standby or emergency power as required in Sections 1203.2.20.1 and 1203.2.20.2.

1203.2.20.1 Standby power. Standby power shall be provided for the following loads:

1. Smoke control systems as required in Section 909.11.
2. Ventilation and automatic fire detection equipment for smokeproof enclosures.
3. Electric fire pumps.
4. Elevators in accordance with Section 1203.2.2 and Section 3003 of the International Building Code.

1203.2.20.2 Emergency power. Emergency power shall be provided for the following loads:

1. Emergency voice/alarm communication systems.
2. Fire alarm systems.
3. Automatic fire detection systems.
4. Elevator car lighting.
5. Means of egress lighting and exit sign.

SECTION 1203.2.21 IS ADDED TO READ AS FOLLOWS:

1203.2.21 Group I-1 and I-2. In addition to other provisions in this code, secondary power shall be provided for Group I-1 assisted living facilities and Group I-2 nursing homes to provide power for simultaneous operation of the following:

1. Heating, ventilation, and air conditioning systems for all areas occupied by residents or patients.
2. Fire alarm system, if provided
3. Fire pump, if provided
4. Emergency exit signs
5. Emergency egress illumination
6. All electrically operated locks or latches on egress doors which do not fail to an unlocked position when power is lost, if provided
7. All power-operated doors which cannot be in an unlocked, open position on a 24-hour basis, if provided
8. Smoke control systems provided for egress safety, if provided
9. Emergency responder communication coverage systems, if provided
10. Refrigeration for food preservation and medication stability
11. Potable water booster pumps for buildings three stories or more

12. Elevators used for egress paths in buildings four stores or more above exit discharge
13. Other equipment and devices required for preservation of life

The secondary power supply can be a permanent on-site emergency or standby generator, fuel cell, or a mobile power supply were approved by the fire code official. Where the secondary power source is not a permanent on-site system, the facility shall submit a plan to the fire code official detailing how secondary power will be provided. The secondary power supply plan shall become a component in the fire and life safety plan for the facility. Where the secondary power source is a mobile power supply located off-site and operated under contract to be delivered to the facility at times of need, the secondary power supply shall be capable of being delivered, connected and providing power within a 3-hour time frame following the loss of power.

SECTION 1207.11 IS AMENDED TO READ AS FOLLOWS:

1207.11.1 Equipment listings. ESS shall be listed and labeled in accordance with UL 9540 and marked "For use in residential dwelling units". ESS listed and labeled solely for utility or commercial use shall not be used for residential applications.

Chapter 20 - AVIATION FACILITIES

SECTION 2003.8 IS ADDED TO READ AS FOLLOWS:

2003.8 Battery powered aviation ground support equipment. Lithium battery-powered aviation ground support equipment shall be listed and labeled in accordance with CAN/UL 5840 and shall be operated and maintained in accordance with the listing and manufacturer's instructions.

CHAPTER 28 - LUMBER YARDS AND AGRO-INDUSTRIAL, SOLID BIOMASS AND WOODWORKING FACILITIES

SECTION 2808.1 IS AMENDED TO READ AS FOLLOWS:

2808.1 General. The storage and processing of wood chips, hogged materials, fines, compost, solid biomass feedstock and raw product produced from yard waste, debris and agro-industrial and recycling facilities shall comply with Sections 2808.2 through 2808.14.

SECTION 2808.10 IS AMENDED TO READ AS FOLLOWS:

2808.10 Emergency plan. The owner or operator shall develop a plan for monitoring, controlling and extinguishing spot fires and submit the plan to the fire code official for review and approval, and distributed to the responding fire department for response planning. This plan shall include a site map showing all buildings, major storage, processing and transfer areas, access roads and fire protection features including fire lanes.

SECTIONS 2808.11, 2808.12, 2808.13 AND 2808.14 ARE ADDED TO READ AS FOLLOWS:

2808.11 Fire Protection. Firefighting water supplies and application accessories must be present and accessible, the required amount and location to be approved by acceptance of the fire prevention plan. Examples of certain firefighting capabilities are:

1. Tank truck with the capacity of distributing firefighting water via hose and nozzles comparable to municipal fire department operations.
2. Fire hydrants within 1,000 feet.
3. Ponds with apparatus access and/or water distribution system in place.
4. Water distribution system capable of delivering a minimum of 60 psi and 250 gpm at all site distribution points.

2808.12 Site identification. Facility name and address shall be posted at main entrance and clearly visible from the street. Phone numbers for 24-hour emergency contacts shall be posted at the main entrance and clearly visible from the street.

2808.13. Site Security. Public access shall be limited with fences in place and approved “No Trespassing” signs. Entry gates shall be a minimum 14 feet wide and have sufficient turning radius for fire department access.

2808.14 Fire Prevention. A fire safety plan shall be submitted for approval, and it shall describe routine fire prevention procedures, including no smoking or open flames outside designated areas, fire watch with extinguishers during hot work, and separation of combustible materials from sources of ignition.

CHAPTER 31 - TENTS, TEMPORARY SPECIAL EVENT STRUCTURES AND OTHER MEMBRANE STRUCTURES

SECTIONS 3105.6.1 AND 3105.6.2 ARE AMENDED TO READ AS FOLLOWS:

3105.6.1 Independent inspector. The owner of a temporary special event structure shall provide an as-built certificate from the design professional or employ a qualified, independent approved agency or individual to inspect the installation of a temporary special event structure.

3105.6.2 Inspection report. If the owner employs an inspecting agency or individual, the owner shall furnish an inspection report to the fire code official. The inspection report shall indicate that the temporary special event structure was inspected and was or was not installed in accordance with the approved construction documents. Discrepancies shall be brought to the immediate attention of the installer for correction. Where any discrepancy is not corrected, it shall be brought to the attention of the fire code official and the designated responsible party.

CHAPTER 32 - HIGH-PILED COMBUSTIBLE STORAGE

SECTION 3201.3.2 IS AMENDED TO READ AS FOLLOWS:

3201.3.2 Approved storage layout. A floor plan, of legible size, shall be provided, mounted on a wall and protected from damage. The floor plan shall be mounted in an approved location and show the following:

1. Locations, dimensions and rack layout of high-piled storage areas.
2. Design storage height for each storage area.
3. Types of commodities.

4. Commodity clearance between top of storage and the sprinkler deflector for each storage arrangement.
5. Aisle dimensions between each storage array.
6. For palletized and solid-piled storage, the maximum pile volume for each storage array.
7. Location and classification of commodities in accordance with Section 3203.
8. Location of required fire department access doors.
9. Location of valves controlling the water supply of ceiling and in-rack sprinklers.

SECTION 3201.3.3 IS ADDED TO READ AS FOLLOWS:

3201.3.3 Floor Marking. For non-rack storage areas, the floor shall be marked throughout the storage area in an approved manner to clearly define product placement within the storage area in accordance with 3201.3.2.

SECTION 3201.5 IS ADDED TO READ AS FOLLOWS:

3201.5 Required specialized engineered plans. High-piled storage facilities shall be designed with the assistance of an engineer specializing in fire protection, licensed in the State of Texas.

SECTION 3209.5 IS ADDED TO READ AS FOLLOWS

3209.5 Life Safety Analysis. The fire safety evacuation plan required in Section 3201.4 for facilities with automated storage shall include the emergency shutdown procedure, provisions for smoke and heat removal and the emergency action plan.

CHAPTER 50 - HAZARDOUS MATERIALS – GENERAL PROVISIONS

SECTION 5001.1 EXCEPTION 7 IS AMENDED TO READ AS FOLLOWS:

7. Energy storage systems regulated by section 1207.

SECTION 5001.1 EXCEPTION 18 IS ADDED TO READ AS FOLLOWS:

18. Storage of battery types defined in Section 202 and complying with Section 322.

SECTION 5001.1 EXCEPTION 7 IS AMENDED TO READ AS FOLLOWS:

5001.7 Required specialized engineered plans. Group H occupancies shall be designed with the assistance of an engineer specializing in fire protection, licensed in the State of Texas.

CHAPTER 56 - EXPLOSIVES AND FIREWORKS

SECTIONS 5601.2.4.2, 5603.3, Table 5604.5.2(3), 5608.3, and 5609.1 are amended to read as follows and **Sections 5609.2 – 5609.5** have been added to read as follows:

5601.2.4.2 Fireworks display. The permit holder shall furnish a bond or certificate of insurance in an amount deemed adequate by the *fire code official* for the payment of all potential damages to a person

or persons or to property by reason of the permitted display, and arising from any acts of the permit holder, the agent, employees or subcontractors. In accordance with the Texas Occupation Code, the applicant for any display shall submit evidence of a general liability insurance policy in the amount of \$1 million.

5603.3 Loss, theft or unauthorized removal. The loss, theft or unauthorized removal of *explosive materials* from a magazine or permitted facility shall be reported to the *fire code official*, local law enforcement authorities and the U.S. Department of Treasury, Bureau of Alcohol, Tobacco, Firearms and Explosives within 24 hours.

Exception: Loss of Division 1.4G (consumer fireworks) need not be reported to the Bureau of Alcohol, Tobacco, Firearms and Explosives but shall be reported to the fire code official.

TABLE 5604.5.2(3)

TABLE OF DISTANCES (Q-D) FOR BUILDINGS AND MAGAZINES CONTAINING EXPLOSIVES—DIVISION 1.4c

QUANTITY OF DIVISION 1.4 EXPLOSIVES (NET EXPLOSIVES WEIGHT)		DISTANCE IN FEET			
Pounds over	Pounds not over	Inhabited Building Distance (IBD)	Distance to Public Traffic Route (PTR)	Intermagazine Distance a,b (IMD)	Intraline Distance (ILD) or Intraplant Distance ^a (IPD)
50	Not Limited	50	50	50	50

For SI: 1 foot = 304.8 mm, 1 pound = 0.454 kg.

a. A separation distance of 100 feet is required for buildings of other than Type I or Type II construction as defined in the *International Building Code*.

b. For earth-covered magazines, specific separation is not required.

1. Earth cover material used for magazines shall be relatively cohesive. Solid or wet clay and similar types of soil are too cohesive and shall not be used. Soil shall be free from unsanitary organic matter, trash, debris and stones heavier than 10 pounds or larger than 6 inches in diameter. Compaction and surface preparation shall be provided, as necessary, to maintain structural integrity and avoid erosion. Where cohesive material cannot be used, as in sandy soil, the earth cover over magazines shall be finished with a suitable material to ensure structural integrity.

2. The earth fill or earth cover between earth-covered magazines shall be either solid or sloped, in accordance with the requirements of other construction features, but not less than 2 feet of earth cover shall be maintained over the top of each magazine. To reduce erosion and facilitate maintenance operations, the cover shall have a slope of 2 horizontal to 1 vertical.

c. Restricted to articles, including articles packaged for shipment, that are not regulated as an explosive under Bureau of Alcohol, Tobacco, Firearms and Explosives regulations, or unpacked articles used in process operations that do not propagate a detonation or deflagration between articles.

5604.5.2.3 Fireworks 1.4G. Where magazines containing 1.4g fireworks cannot meet the 50' separation inter-magazine distance, only 2 magazines will be allowed on same property.

5608.3 Approved fireworks displays. *Approved* fireworks displays shall include only the *approved* fireworks 1.3G, fireworks 1.4G, fireworks 1.4S and pyrotechnic articles 1.4G, which shall be handled by an *approved*, competent operator licensed by the State of Texas. The *approved* fireworks shall be arranged, located, discharged and fired in a manner that will not pose a hazard to property or endanger any person.

5609.1 General. The sale, storage, and display of Fireworks 1.4G is subject to the authority of the fire code official, including the authority to inspect, determine the presence of fire hazards.

5609.1.1 Applicability. This Section 5609 provides standards for the design and construction of buildings in which Fireworks 1.4G are to be stored, sold, or displayed. Such design and construction shall comply with this section and the Texas Fireworks Rules, current edition, as promulgated by the Texas State County Fire Marshal.

5609.1.2 Compliance with Fire Code. All structures used for the storage or sale of consumer fireworks 1.4G shall comply with the applicable provisions of the Harris County Fire Code for new structures, and with applicable sections of this sub-section.

5609.1.3 Fire Code Permit and Inspections. Any structure that is erected, occupied, or moved into or within the jurisdiction is considered new construction and requires a Fire Code permit and an inspection to ensure compliance with the adopted code.

5609.2 Definitions.

5609.2.1 Temporary Structure. Any structure that is erected, occupied, or moved into or within the jurisdiction, for a period of less than 180 days.

5609.2.2 Permanent Structure. Any structure that is erected, or moved into or within the jurisdiction, for a period of more than 180 days.

5609.2.3 Fireworks Control Area. Spaces within a building where quantities of fireworks 1.4G, not exceeding the maximum allowable quantities, are stored, dispensed, used or handled.

5609.3 Conflict between provisions. If there is a conflict between the provisions of this section and the Fireworks Rules, the more stringent of the provisions shall apply.

5609.3.1 Limit of authority. This section does not limit the authority of the County Fire Marshal to inspect any retail site location or storage facility to require additional fire protection measures.

5609.4 Requirements for all retail sales, displays, and storage sites and facilities. All Fireworks 1.4G retail sales sites, storage buildings, and control areas, including temporary storage facilities such as trailers, semi-trailers, or metal shipping containers must conform to the minimum standards of this section.

5609.4.1 Physical Address and Emergency Contact. All retail sales sites and storage facilities must have the physical address and a 24-hour emergency contact number prominently posted on the outside of each site, close to the main entrance, in numbers at least 4 inches in height and ½ inch stroke in width on a contrasting background, and visible from the street or road fronting the property.

5609.4.2 Residential Storage. Fireworks 1.4G retail storage buildings shall not be used for residential occupancies. Use of a residential building for the storage of fireworks in excess of 125 pounds of pyrotechnic material shall be considered a change in occupancy.

5609.4.3 Maximum allowable quantity. No more than 125 pounds of pyrotechnic material may be stored and/or displayed in any control area. In the absence of documentation approved by the fire code official, 25 percent of the gross weight of the fireworks, including all packaging, will be used to determine the 125-pound limitation.

Exception:

1. The maximum allowable quantities can be increased 100 percent if the building is equipped throughout with an automatic sprinkler system in accordance with Section 903.
2. The maximum allowable quantities may be greater than allowed by this section, subject to approval by the County Fire Marshal, if the building meets all requirements for a Group H-3 occupancy and Section 5609.4.

The aggregate quantity in use and storage shall not exceed the quantity listed for storage in the

Application for Permit.

5609.4.4 Minimum separation distances. Except as specified elsewhere in this section, structures shall be located in accordance with the requirements of Table 5609.4.1

Exceptions:

1. Trailers, semi-trailers, and metal containers used for storage only must be separated by at least 50 ft. from any building or structure other than other trailers, semitrailers, or metal shipping containers. There is no minimum distance between multiple trailers or semi-trailers when used for storage only.
2. Permanent facilities permitted before January 1, 2019, may be separated from adjacent buildings by less than 20 ft. if they are separated by a wall with a 1-hour fire resistance rating, provided existing facilities are not enlarged or expanded.
3. Where multiple firework retail stands are on a single property, separation shall be no less than 10 ft. Firework retail stands can be joined together with no separation if stands do not exceed 70 ft. in length.

Table 5609.4.1 Minimum Separation Distances of Fireworks 1.4G Retail Sales Buildings, including Trailers, Semi-trailers, and Metal Shipping Containers

Type of Structure	Minimum Distance
From other trailers or semi-trailers	0 ft.
From Vehicles	10 ft.
From other buildings	20 ft.
From combustibles	30 ft.
From cooking equipment of any type, or any open flame equipment	50 ft.
Motor vehicles fuel-dispensing station dispensers or Retail propane dispensing station dispenser	100 ft.

5609.4.5 Electrical Work. Electrical work performed must be installed in accordance with the National Electrical Code.

5609.4.5.1 Required Listing. All electrical equipment, battery-powered equipment, and electrical cords shall be listed and shall be used in accordance with their listing.

5609.4.5.2 Temporary Power. The fire code official is authorized to give permission to temporarily supply and use power for up to 180 days. All temporary conductors shall comply with the National Electrical Code.

5609.4.5.3 Light fixture guards. All incandescent light fixtures within 25 ft. of any consumer fireworks shall have metal or plastic guards. All fluorescent light fixtures within 25 ft. of any consumer fireworks shall have plastic tube guards with caps or metal guards or plastic lens covers.

5609.4.5.4 Portable generators. Portable generators supplying power to consumer fireworks retail sales facilities shall comply with this section.

5609.4.5.4.1 Location distance. Portable generators shall be located not less than 10 ft. from the consumer fireworks retail sales facility and in an area free from grass, trash, and other combustible flammable materials.

5609.4.5.4.2 Surplus fuel. Generator fuel shall be stored in an approved safety container at least 10 ft. from the consumer fireworks retail sales facility. Fuel quantity shall be limited to not more than 10 gal.

5609.4.5.4.3 Extinguisher. For all generators a minimum 6 B.C. fire extinguisher shall be provided within 75 feet travel distance from generator location.

5609.4.6 Means of Egress. Means of egress including, but not limited to aisles, doors, and exit discharge, shall be clear at all times when the facility or the building is occupied.

5609.4.6.1 Number of exits. Each retail fireworks stand less than 16 feet in length shall have at least one walk door which opens outward, in a location approved by the fire code official. Stands measuring 16 feet or longer must have at least two walk doors which open outward, in locations approved by the fire code official.

5609.4.6.2 Maximum travel distance. Exits provided for all fireworks retail sales stands shall be arranged so that the maximum egress travel distance does not exceed 35 ft.

5609.4.6.3 Exit door requirements. The minimum dimensions of any walk door are 28 inches wide X 72 inches high. Walk doors must not be locked from the outside when the stand is occupied and must be immediately accessible from the inside.

5609.4.6.4 Minimum aisle width. A minimum distance of six feet shall be maintained from the front of the customer counter to the back side of the stand. The minimum clear exit aisle width is 28 inches.

5609.4.7 Fire Protection. All Fireworks 1.4G retail stands must comply with this section.

5609.4.7.1 Smoke detectors. Each stand will have an operational smoke detector in each sales area. If sleeping or rest areas are provided in the stand, there must be one smoke detector in each sales area and one in each sleeping or rest area.

5609.4.7.2 Cooking equipment. Cooking equipment of any type, or any open-flame equipment, shall not be permitted within 50 ft. of all stands, trailers, or shipping containers used for the storage or sale of consumer fireworks.

5609.4.7.3 Retail stand fireworks control areas. In Fireworks 1.4G retail stands, a flame break approved by the fire code official, may be installed every 8-10 feet to establish retail stand fireworks control areas. No more than 125 lbs. of pyrotechnic material may be stored and/or displayed in any retail stand fireworks control area.

5609.4.7.4 Approved flame break. An approved flame break, of not less than 3/4-inch plywood, shall be used to separate retail stand fireworks control areas. Separation shall begin at the back wall and extend to the furthest shelf point, and from the floor to the underside of roof. Fire caulking shall be applied at all penetrations and adjoining points along the 3/4-inch plywood separation.

5609.5 Specific requirements for retail fireworks sites other than stands. All indoor retail fireworks sites and storage facilities, other than stands, shall comply with the requirements of this section.

5609.5.1 Building Design. The retail fireworks sales building shall be a free standing, durable structure with no basement, and only one story of space accessible to the public.

5609.5.2 Multi-use building prohibited. The fireworks sales area shall not be part of a multi-use or multi-tenant building, except that office areas and restrooms ancillary to the building are allowed if:

1. Offices and related spaces are separated from fireworks storage or sales areas by fire barriers having a fire resistance rating of not less than 1 hour; and

2. Window openings in the fire barrier wall are protected by self-closing fire doors or fixed fire windows having a fire protection rating of not less than $\frac{3}{4}$ hour, and installed in accordance with NFPA 80, Standard for Fire Doors and Fire Windows.

5609.5.3 Assembly and educational occupancies prohibited. Assembly or educational occupancies cannot be used for the storage or sale of fireworks 1.4G.

5609.5.4 Application, Plans, Approval, Permits. All newly constructed firework retail sites other than stands shall comply with the adopted Harris County Fire Code Regulation and all processes shall be followed for plan submittal, approval, permitting, and inspection.

5609.5.5 Emergency response plan. The operator of each indoor retail sales site or storage facility shall prepare a written emergency response plan in accordance with Chapter 4 of this Code. The evacuation plan shall be posted in a conspicuous location that is accessible to the public as well as to persons employed or otherwise working in the facility.

5609.5.6 Maximum occupant load. The approved maximum occupant load shall be conspicuously posted near the main entrance using a format approved by the fire code official. Records of occupant load will be maintained onsite and available for inspection by the fire code official.

5609.5.7 Means of Egress. All means of egress in consumer fireworks retail sales facilities, other than stands, shall comply with the applicable requirements of this section.

5609.5.7.1 Minimum number of exits. The minimum number of exits provided from the retail sales area shall be not less than three, or more as determined in accordance with this Code.

5609.5.7.2 Maximum travel distance. Exits provided for the retail sales area of consumer fireworks retail sales facilities, other than stands, shall be located so that the maximum egress travel distance, measured from the most remote point to an exit along the natural and unobstructed path of egress travel, does not exceed 75 ft.

5609.5.7.3 Minimum aisle width. Aisles shall have a minimum clear width of 48 inches. Aisles and exit doors shall be kept free of any obstruction.

5609.5.7.4 Minimum exit door width. The minimum egress door width shall be not less than 36 inches in width and will provide a minimum clear opening width of 32 inches.

5609.5.7.5 Egress door swing. Unless approved by the County Fire Marshal, all egress doors shall be of the side-hinge swinging type and shall be arranged to swing in the direction of egress travel.

5609.5.7.6 Panic Hardware. Every egress door that has a latching device shall be provided with approved panic hardware.

5609.5.7.7 Roll-up or lift doors. Roll-up or lift doors may be used as egress doors when there is a readily distinguishable device that secures each door in the open position whenever the building is occupied.

5609.5.8 Sales area design. Fireworks sales display areas shall be sufficiently designed to prevent customers from handling fireworks, unless an attendant is directly assisting the customer.

5609.5.8.1 Visual Supervision. The sales area shall be designed and constructed so that fireworks shall be under the visual supervision of a store employee or other responsible party while the store is open to the public.

5609.5.8.2 Height counter and displays. Partitions, counters, shelving, cases, displays, product and similar sales areas shall not exceed 6 ft. in height above the floor surface inside the perimeter of the retail sales area.

5609.5.8.3 Height perimeter. Where located along the perimeter of the retail sales area, the maximum height of sales displays, shelving, and product shall be limited to 12 ft.

5609.5.9 Fire protection.

5609.5.9.1 Fire Extinguishers. Portable fire extinguishers shall be specified as required for extra (high) hazard occupancy in accordance with NFPA 10, Standard for Portable Fire Extinguishers.

5609.5.9.1.1 Number and Placement. Every indoor retail sales building shall have not less than two portable fire extinguishers with a minimum 2A rating. At least one approved Class A fire extinguisher shall be provided for each 1,000 square feet of floor space, not to exceed 75 ft. travel distance.

5609.5.9.2 Fire alarm system. A fire alarm system, installed in accordance with NFPA 72, shall be required in all consumer fireworks retail sales facilities. Facilities less than 3,000 sq. ft. in area AND in existence and continuously permitted before January 1, 2005, are exempt from compliance provided such facilities are not enlarged or expanded beyond their January 1, 2005 operation.

5609.5.9.3 Automatic fire sprinklers. An automatic sprinkler system shall be required in all consumer fireworks retail sales facilities. Facilities less than 6,000 sq. ft. in area AND in existence and continuously permitted before January 1, 2005 are exempt from compliance, provided such facilities are not enlarged or expanded beyond their January 1, 2005 operation.

5609.5.9.4 Smoke Control. All sites must have a minimum average ceiling height of 12 ft. Smoke and heat vents designed and installed in accordance with NFPA 204, Standard for Smoke and Heat Venting shall be provided in consumer fireworks storage buildings. Facilities less than 50,000 sq. ft. in area and in existence and continuously permitted before January 1, 2005, are exempt from compliance, provided such facilities are not enlarged or expanded beyond their January 1, 2005 operation.

5609.5.10 Other codes, standards, and laws. Unless specifically outlined in this chapter, all retail fireworks sites shall comply with the other applicable chapters of this code, the Texas Occupations Code 2154, Texas Local Government Code 352, and the Texas Fireworks Rules.

CHAPTER 58 - FLAMMABLE GASES AND FLAMMABLE CRYOGENIC

SECTION 5809 IS ADDED TO READ AS FOLLOWS:

SECTION 5809

ON-DEMAND HYDROGEN MOBILE FUELING OPERATIONS

5809.1 General. On-demand hydrogen mobile fueling operations that dispense gaseous hydrogen into the fuel tanks of motor vehicles shall comply with Sections 5809.1 through 5809.6.5.

5809.1.1 Approval required. Hydrogen mobile fueling operations shall not be conducted without first obtaining a permit and approval from the fire code official. Hydrogen mobile fueling operations shall occur only at approved locations. The fire code official is authorized to approve individual locations or geographic areas where mobile fueling is allowed.

5809.2 Hydrogen mobile fueling vehicle or trailer. An on-demand hydrogen mobile fueling vehicle or mobile fueling trailer shall be that which is utilized in on-demand fueling operations for the dispensing of gaseous hydrogen into the fuel tanks of motor vehicles.

5809.2.1 Hydrogen mobile fueling vehicle requirements. Each hydrogen mobile fueling vehicle or mobile fueling trailer shall comply with all local, state and federal requirements, as well as the following:

1. The hydrogen mobile fueling vehicle or mobile fueling trailer and its equipment shall be in compliance with the appropriate requirements of NFPA 2.
2. Hydrogen mobile fueling vehicles or mobile fueling trailers shall only contain and dispense gaseous hydrogen.
3. The hydrogen mobile fueling vehicle or mobile fueling trailer and its equipment shall be maintained in good repair.
4. Fueling a hydrogen motor vehicle shall be from tanks or containers mounted on a mobile fueling trailer or from tanks or containers mounted on a mobile fueling vehicle. A mobile fueling operation shall not combine a mobile fueling vehicle with a mobile fueling trailer.
5. Mobile fueling vehicles and trailers shall be provided with at least one minimum 10-pound ABC dry-chemical portable fire extinguisher with an agent discharge rate of 1 pound per second (0.454 kg/s) or greater.

5809.3 Required documents. Documents developed to comply with Sections 5809.3.1 through 5809.3.3 shall be updated as necessary by the owner of the mobile fueling operation and shall be maintained in compliance with Section 110.3.

5809.3.1 Safety and emergency response plan. Hydrogen mobile fueling operators shall have an approved written safety and emergency response plan that establishes policies and procedures for fire safety, release and control, personnel training and compliance with other applicable requirements of this code.

5809.3.2 Training records. Hydrogen mobile fueling vehicles or mobile fueling trailers shall be operated only by designated personnel who are trained on proper fueling procedures and the safety and emergency response plan. Training records of operators shall be maintained.

5809.3.3 Site plan. Where required by the fire code official, a site plan shall be developed for each location at which hydrogen mobile fueling occurs. The site plan shall be of sufficient detail to indicate the following:

1. All buildings and structures.
2. Lot lines or property lines.
3. Solar photovoltaic parking lot canopies.
4. Appurtenances on-site and their use or function.
5. All uses adjacent to the lot lines of the site.

6. Hydrogen fueling locations.

7. Scale of the site plan.

5809.4 Hydrogen mobile fueling areas. Hydrogen mobile fueling shall not occur on public streets, in public ways or inside buildings. Fueling on the roof level of parking structures or other buildings is prohibited unless access to the roof level is available without entering the structure or building.

5809.4.1 Separation. The point of connection of the vehicle being fueled shall not take place within the distances specified by NFPA 2 Table 7.2.2.3.2 based on the maximum rated capacity of the hydrogen mobile fueling vehicle.

5809.4.2 Sources of ignition. Smoking, open flames and other sources of ignition shall be prohibited within 25 feet (7620 mm) of fuel-dispensing activities. Signs prohibiting smoking or open flames within 25 feet (7620 mm) of the vehicle or the point of fueling shall be prominently posted on the hydrogen mobile fueling vehicle. The fuel cell of vehicles being fueled shall be shut off during fueling.

5809.5 Equipment. Hydrogen mobile fueling equipment shall comply with Sections 5809.5.1 and 5809.5.2.

5809.5.1 Dispensing hoses, nozzles and equipment. Dispensing hoses, nozzles and equipment shall comply with NFPA 2.

5809.5.2 Fire extinguisher. An approved portable fire extinguisher complying with Section 906 with a minimum rating of 4-A:80-B:C shall be provided on the hydrogen mobile fueling vehicle with signage clearly indicating its location.

5809.6 Operations. Hydrogen mobile fueling vehicles or mobile fueling trailers shall be operated in accordance with this section and NFPA 2.

5809.6.1 Attendant. Hydrogen mobile fueling vehicles or mobile fueling trailers shall be attended at all times during fueling operations, with brakes set and warning lights in operation.

5809.6.2 Emergency access roads. Hydrogen mobile fueling vehicles shall not obstruct emergency vehicle access roads.

5809.6.3 Dispensing hose. Where equipped, hydrogen mobile fueling vehicles or mobile fueling trailers shall be positioned in a manner to preclude traffic from driving over the dispensing hose. The dispensing hose shall be properly placed on an approved reel or in an approved compartment prior to moving the mobile fueling vehicle.

5809.6.4 Safety cones. Safety cones or other visual barriers shall be employed as warning devices to highlight the vehicle fueling area.

5809.6.5 Vehicle lights. The hydrogen mobile fueling vehicle or mobile fueling trailer flasher lights shall be in operation while dispensing operations are in progress.

5809.6.6 Nighttime deliveries. Nighttime deliveries shall be made only in areas deemed adequately lighted by the fire code official.

5809.6.7 Spill reporting. Releases shall be reported where required by Section 5003.3.1.

CHAPTER 80 - REFERENCED STANDARDS

THE USER NOTE TO CHAPTER 80 IS AMENDED TO READ AS FOLLOWS:

About this chapter: This code contains numerous references to standards promulgated by other organizations that are used to provide requirements for materials and methods of construction. This chapter contains a comprehensive list of all standards that are referenced in this code. These standards, in essence, are part of this code to the extent of the reference to the standard.

This chapter lists the standards that are referenced in various sections of this document. The standards are listed herein by the promulgating agency of the standard, the standard identification, effective date and title, and the section or sections of this document that reference the standard. If the State of Texas has adopted any of the listed standards, the more stringent or more current standard of the provisions shall apply.

CHAPTER 80 is amended to add the following reference standards:

NFPA

NFPA 1, Uniform Fire Code—Current State adopted edition, Section 20.5

NFPA 101® Life Safety Code®— Current State adopted edition, Chapter 33

APPENDIX B - FIRE-FLOW REQUIREMENTS FOR BUILDINGS

SECTION B103.3 IS AMENDED TO READ AS FOLLOWS:

B103.3 Areas without water supply systems. For information regarding water supplies for firefighting purposes in rural and suburban areas in which adequate and reliable water supply systems do not exist, the fire code official is authorized to use nationally recognized standards and guidelines established by Harris County.

APPENDIX D - FIRE APPARATUS ACCESS ROADS

SECTION D103.6 IS AMENDED TO READ AS FOLLOWS:

D103.6 Signs. Where required by the fire code official, fire apparatus access roads shall be marked with permanent fire lane signs complying with Figure D103.6 and reading “NO PARKING FIRE LANE” or “FIRE LANE NO PARKING”. Signs shall have a minimum dimension of 12 inches (305 mm) wide by 18 inches (457 mm) high. Signs shall have red letters with a minimum height of 2 inches on a white reflective background. Signs shall be installed with the bottom of the sign 6’- 6” above finished grade. Signs shall be spaced not more than 50 feet apart. Signs be permanently affixed to a stationary post, buildings or walls or as approved by the Fire code official. The means by which fire lanes are designated shall be maintained at all times and be replaced or repaired when necessary to provide adequate visibility. Signs shall be posted on one or both sides of the fire apparatus road as required by Section D103.6.1 or D103.6.2.

EXHIBIT B - ADDITIONS, INSERTIONS, DELETION AND CHANGES TO INTERNATIONAL BUILDING CODE 2021 EDITION

CHAPTER 3 - OCCUPANCY CLASSIFICATION AND USE

SECTION 308.3.3 IS ADDED TO READ AS FOLLOWS:

308.3.3 Four to 16 persons receiving custodial care. Refer to Section 429.

CHAPTER 5 - GENERAL BUILDING HEIGHTS AND AREAS

TABLE 508.4 IS AMENDED TO INCLUDE FOOTNOTE “g” TO READ AS FOLLOWS:

**TABLE 508.4
REQUIRED SEPARATION OF OCCUPANCIES (HOURS)^f**

OCCUPANCY GROUP	A, E		I-1 ^a , I-3, I-4		I-2		R ^a		F-2, S-2 ^b , U		B ^{e,g} , F-1, M, S-1		H-1		H-2		H-3, H-4		H-5	
	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS
A, E	N	N	1	2	2	NP	1	2	N	1	1	2	NP	NP	3	4	2	3	2	NP
I-1 ^a , I-3, I-4	1	2	N	N	2	NP	1	NP	1	2	1	2	NP	NP	3	NP	2	NP	2	NP
I-2	2	NP	2	NP	N	N	2	NP	2	NP	2	NP	NP	NP	3	NP	2	NP	2	NP
R ^a	1	2	N	N	2	NP	N	N	1 ^c	2 ^c	1	2	NP	NP	3	NP	2	NP	2	NP
F-2, S-2 ^b , U	N	1	1	2	N	N	1 ^c	2 ^c	N	N	1	2	NP	NP	3	4	2	3	2	NP
B ^{e,g} , F-1, M, S-1	1	2	1	2	2	NP	N	N	1	2	N	N	NP	NP	2	3	1	2	1	NP
H-1	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	N	NP	NP	NP	NP	NP	NP	NP
H-2	3	4	3	NP	3	NP	3	NP	3	4	2	3	NP	NP	N	NP	1	NP	1	NP
H-3, H-4	2	3	2	NP	2	NP	2	NP	2	3	1	2	NP	NP	1	NP	1 ^d	NP	1	NP
H-5	2	NP	2	NP	2	NP	2	NP	2	NP	1	NP	NP	NP	1	NP	1	NP	N	NP

S = Buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1.

NS = Buildings not equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1.

N = No separation requirement.

NP = Not permitted.

- a. See Section 420.
- b. The required separation from areas used only for private or pleasure vehicles shall be reduced by 1 hour but to not less than 1 hour.
- c. See Section 406.3.2 and 406.6.4.
- d. Separation is not required between occupancies of the same classification.
- e. See Section 422.2 for ambulatory care facilities.
- f. Occupancy separations that serve to define fire area limits established in Chapter 9 for requiring fire protection systems shall also comply with Section 707.3.10 and Table 707.3.10 in accordance with Section 901.7.
- g. Group B occupancies are not required to be separated from Group F-2, S-2 or U occupancies, unless required by the County Engineer or Fire Code Official.

CHAPTER 10 - MEANS OF EGRESS

TABLE 1004.5 “ASSEMBLY” IS AMENDED TO READ AS FOLLOWS:

**TABLE 1004.5
MAXIMUM FLOOR AREA ALLOWANCES PER OCCUPANT**

FUNCTION OF SPACE	OCCUPANT LOAD FACTOR ^a
Assembly	
Gaming floors (keno, slots, etc.)	11 gross
Exhibit Gallery and Museum	30 net

Escape/Puzzle rooms	11 net
Assembly with fixed seats	See Section 1004.6
Assembly without fixed seats	
Concentrated (chairs only—not fixed)	7 net
Standing space	5 net
Unconcentrated (tables and chairs)	15 net

For SI: 1 square foot = 0.0929 m².

- a. Floor area in square feet per occupant.

EXHIBIT C- CONTACTS FOR PROCESSES

1) Harris County Fire Marshal's Office

a) Operational Permits

- i) Email: fmooperationalpermit@fmo.hctx.net
- ii) Phone: 713-274-1720

b) Fire Code Inspections

- i) Email: fmosupport@fmo.hctx.net
- ii) Phone: 713-274-1700

c) Annual Inspections

- i) Email: fmooperationalpermit@fmo.hctx.net
- ii) Phone: 713-274-1720

d) Fire Code Complaints

- i) Email: fmosupport@fmo.hctx.net
- ii) Phone: 713-274-1700

2) Harris County Engineering office

a) Fire Code permits

- i) Email: firecode@harriscountytexas.gov
- ii) Phone: 713-274-3922

b) Power release

- i) Email: powerrelease@harriscountytexas.gov
- ii) Phone: 713-274-3926

c) Storm water

- i) Email: swqinspect@harriscountytexas.gov
- ii) Phone: 713-274-3900

d) Civil Development

- i) Email: civildevel@harriscountytexas.gov
- ii) Phone: 713-274-3921

e) Minor Site Development

- i) Email: minordev@harriscountytexas.gov
- ii) Phone: 713-274-3933

f) Signs

- i) Email: signs@hcpid.org
- ii) Phone: 713-274-3922

g) Communications Facilities

- i) Email: minordev@harriscountytexas.gov
- ii) Phone: 713-274-3933

h) Right of way

- i) Email: public.review@harriscountytexas.gov
- ii) Phone: 713-274-3931

i) Street Acceptance

- i) Email: acceptance@harriscountytexas.gov
- ii) Phone: 713-274-3931

j) Floodplain

- i) Email: darrell.hahn@harriscountytexas.gov
- ii) Phone: 713-274-3776

k) Residential

- i) Email: residential@harriscountytexas.gov
- ii) Phone: 713-274-3920